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**Ciba**

## **SEMIANNUAL MONITORING REPORT**

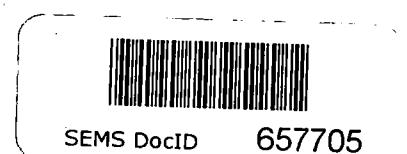
**CIBA-GEIGY FACILITY  
180 MILL STREET  
CRANSTON, RHODE ISLAND**

### **MONITORING RESULTS**

**FOR**

**JULY - DECEMBER 2000**

**CIBA SPECIALTY CHEMICALS CORPORATION  
TOMS RIVER, NEW JERSEY 08754**





**January 22, 2001**

Mr. Frank Battaglia (2 copies)  
USEPA Region I  
Office of Site Remediation and Restoration (HBT)  
JFK Federal Building  
Boston, MA 02203

**Re:      Quarterly Progress Report for October, November, and December 2000**  
**Ciba Specialty Chemicals, 180 Mill Street, Cranston, RI 02905**  
**EPA ID RID001194323**

Dear Mr. Battaglia:

As required by the modified Consent Decree (CD) of September 28, 1992, I am submitting a stabilization progress report for the third quarter of 2000. Included along with the quarterly report is the Semiannual Monitoring Report for the September 2000, well sampling episode at the referenced facility.

## **1.0 SUMMARY**

### **Stabilization Plan (IRM)**

- **Contaminated groundwater in the Production Area (AOC 13)** -- The groundwater extraction wells 110, 120, and 130 and the pretreatment system are operating at near capacity.

Since initiation on September 29, 1995, the groundwater stabilization pretreatment plant has processed approximately 159 million gallons of contaminated groundwater meeting the permit wastewater discharge limits for the City of Cranston, Rhode Island.

Ciba received a new 5 year Industrial Wastewater Discharge Permit from the Department of Public Works effective October 7, 2000.

- **Soil in the Production Area (SWMU 11)** – A new thermal oxidizer (TO) was installed to treat VOAs at the site during September 2000. Startup testing of the unit occurred in October and performance testing was completed on October 11, 2000.

**2.0 DISCUSSION****Semiannual Monitoring Report**

A Semiannual Monitoring Report covering the sampling and analysis for September 2000, is complete. The results of the sampling show 1,2-dichlorobenzene and chlorobenzene exceeding the Media Protection Standards (MPS) in 5 wells, 3 wells are along the bulkhead and 2 wells opposite the bulkhead in the river. Since the previous monitoring episode performed in April 2000, MPS exceedances have increased from 5 to 7. Possible changes in the groundwater matrix at some monitoring wells may be due to the recent (January 2000) incorporation of a third extraction well along the bulkhead.

**SVE/Thermal Oxidizer**

On October 11, 2000, Ciba documented greater than 99% destruction efficiency by the Thermal Oxidizer unit (test report previously provided to USEPA and RIDEM). The SVE/TO system unit was operated in a shake-down mode during the remainder of October and during most of November to remedy programming glitches caused by the thermal oxidizer/SVE unit interface and to resolve mechanical/electrical issues associated with the reactivation of the SVE systems. Operation of the unit was suspended during December while new water level sensors were purchased. Installation of the sensors and startup of the system should be completed during early part of January 2001.

**3.0 SCHEDULE OF ACTIVITIES**

- Next semiannual groundwater monitoring episode April 2001

If you have questions or need additional information, please contact me at 732 914-2537 or fax 732 914-2909.

Sincerely,

  
Barry Cohen  
Projector Coordinator

Attachment: 1

**Monthly Report Distribution List**

Mr. Frank Battaglia (2 copies)  
USEPA Region I  
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Barley Mill Plaza #27  
PO Box 80027  
Wilmington, DE 19880-0027  
(302) 992-7643

Dayna Jordan  
Ciba Specialty Chemicals Corp.  
Environmental Matters Agreement  
Tarrytown, NY

*Rec'd*  
1-25-01  
*F.B*

## **SEMIANNUAL MONITORING REPORT**

**CIBA-GEIGY FACILITY  
180 MILL STREET  
CRANSTON, RHODE ISLAND**

### **MONITORING RESULTS**

**FOR**

**JULY - DECEMBER 2000**

**CIBA SPECIALTY CHEMICALS CORPORATION  
TOMS RIVER, NEW JERSEY 08754**

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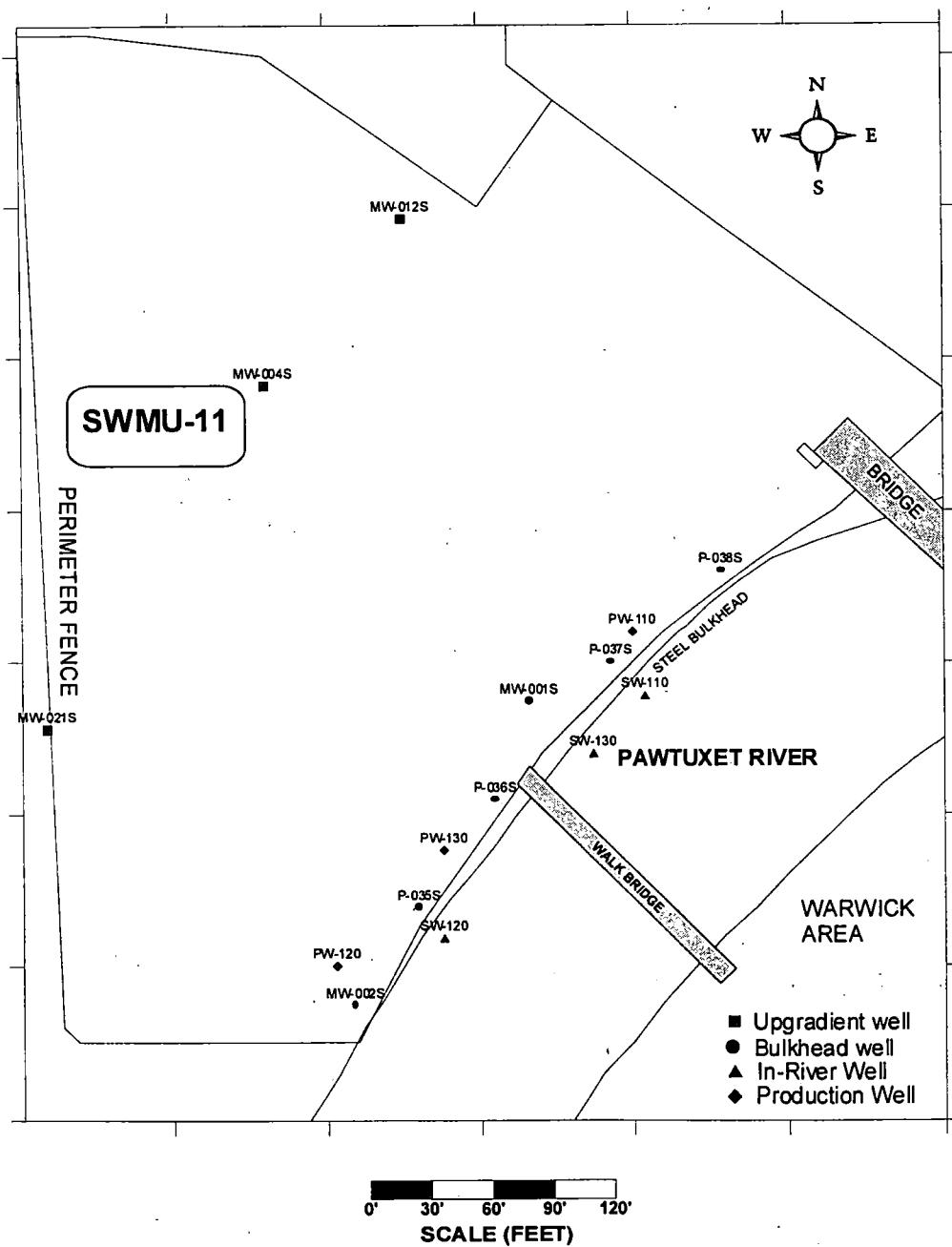
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- Appendix A Tabulated Groundwater Elevation Data and Potentiometric contours
- Appendix B Certificate of Analysis - R. I. Analytical
- Appendix C Time-Series Graphs and Data for Upgradient Wells
- Appendix D Time-Series Graphs and Data for Bulkhead Wells
- Appendix E Time-Series Graphs and Data for In-River Wells
- Appendix F R.I. Analytical Letter

## WELL LOCATION MAP

### CIBA SPECIALTY CHEMICALS CORPORATION (FORMERLY CIBA-GEIGY CORPORATION) CRANSTON, RI FACILITY FORMER PRODUCTION AREA

#### Chemical Well Monitoring Network



## 1.0 SUMMARY

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On June 16, 1989, Ciba-Geigy Corporation (now Ciba Specialty Chemicals Corporation (Ciba)) entered into an Administrative Order on Consent (AOC) with the USEPA. The AOC required Ciba to conduct a Corrective Measures Study (CMS) and propose Media Protection Standards (MPSs) for the former manufacturing facility at Cranston, RI (the Facility). MPSs for five chemicals of concern (COC) were developed (see Table 1) and are monitored at 12 wells two times a year.

The second semiannual monitoring episode was performed on September 21-22, 2000, at which time 12 monitoring wells and 3 production wells were sampled and analyzed by Rhode Island Analytical for a suite of chemicals including the COC. Semiannual water level readings were recorded on October 3, 2000.

A third Production Well, PW-130, began operating on December 20, 1999, and is presently pumping at the nominal capacity of 23 GPM. The new well complements the two existing capture wells to achieve hydraulic capture of the plume along the bulkhead in the former Production Area. The potentiometric surface map (Figure 2, Appendix A) for October 2000, demonstrates capture along the entire bulkhead.

The results of the September 2000, sampling show 1,2-dichlorobenzene and chlorobenzene exceeding the MPSs in 5 wells, 3 along the bulkhead and 2 opposite the bulkhead on the river side. The highest value for 1,2-dichlorobenzene was 9100 ppb (MPS = 94 ppb) and for chlorobenzene 9400 ppb (MPS = 1700 ppb).

The laboratory performing the analyses generated a number of non-detection results with high Method Detection Limits (MDLs). These high MDLs are in some cases higher than the MPSs for the particular analyte and make a determination of achieving the groundwater standard impossible to conclude. Ciba is in discussion with the laboratory to correct this problem. A letter by the laboratory referencing the problem is included in Appendix F.

Since the previous monitoring episode performed in April 2000, MPS exceedances have increased from 5 to 7 and encompass 5 wells of the 12 wells being monitored.

The next monitoring episode will be in April 2001.

## 2.0 OBJECTIVE

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The objective of the monitoring program is to evaluate the GETS on controlling releases to the Pawtuxet River while long-term corrective measures to areas of concern are being evaluated, specifically SWMU-11.

## 3.0 INTRODUCTION

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In August 1996, Ciba submitted to the USEPA a Pawtuxet River Corrective Measures Study (PRCMS) Report. In the PRCMS report (Section 3.5.1, page 3-12) Ciba proposed to measure groundwater elevations in the former Production Area quarterly during the first two years following startup of the groundwater capture system and then semiannually until the groundwater capture and pretreatment system were shutdown.

Therefore, groundwater elevation data is collected from 23 wells to show that shallow contaminated groundwater in the former Production Area is hydraulically controlled from discharging into the Pawtuxet River.

Inclusive of the PRCMS Ciba also proposed to monitor groundwater quality at the Facility. Groundwater is sampled semiannually from 12 selected overburden-monitoring wells to evaluate changes in groundwater quality, specifically in COC.

## 4.0 MEDIA PROTECTION STANDARDS

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During the RCRA Facility investigation an MPS<sup>1</sup> was developed for each of five chemical contaminants detected in the Production Area groundwater. These contaminants and their respective MPSs are summarized in Table 1 and discussed in detail in the PRCMS Report, Section 2.4.1.

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<sup>1</sup> From the Public Health and Environmental Risk Evaluation (PHERE) that concluded the sole receptor impacted by contaminated groundwater were benthic invertebrates in the shallow sediments of the Pawtuxet River.

**Table 1**  
**Media Protection Standards**  
**CIBA-GEIGY, Cranston R.I. Facility**  
**Former Production Area**

<b>Compound</b>	<b>MPS Concentration (ppb)</b>
1,2-dichlorobenzene	94
chlorobenzene	1700
ortho-chlorotoluene	1500
toluene	1700*
xylenes	76

\* Rhode Island Groundwater Objective GB - Groundwater classified as GB has been designated by the Rhode Island Department of Environmental Management (RIDEM) as not suitable for public or private drinking water use.

## **5.0 SEMIANNUAL MONITORING RESULTS**

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This report summarizes the groundwater quality results for the COC sampling that was performed September 21-22, 2000. The COC data are compared to previous sampling rounds dating back to March 1996, when semiannual monitoring activities were initiated. Also in this report are results of the hydraulic monitoring performed on October 3, 2000. The hydraulic results are compared to pre-pumping baseline conditions dated September 30, 1993.

### **5.1 Hydraulic Monitoring**

Piezometric contours for the overburden aquifer were created using data collected on October 3, 2000, from 23 groundwater monitoring wells and 3 capture wells using Golden Software, Inc., SURFER FOR WINDOWS, Version 5.01 software.

The tabulated groundwater elevation data and the associated potentiometric contours, Figures 1 and 2, are included in Appendix A.

The kriging contour algorithm was used as a best fit method of approximating the directional groundwater flow pattern. The baseline results in Figure 1 show groundwater flow from northwest to southeast to the Pawtuxet River. Figure 2 shows the effect of the 3 extraction wells on the groundwater flow. Well PW-110 north of the walk bridge shows groundwater capture at present pumping capacity 42 GPM; the second and third capture wells, PW-120 (3 GPM) and PW-130 (23 GPM), are capturing the plume along the bulkhead south of the walk

bridge. Together the 3 wells are capturing a significant portion of the groundwater passing by the bulkhead to the Pawtuxet River.

The hydraulic capture along the bulkhead is discussed in detail in the report "Capture Zone Analysis, Former Production Area, Cranston, Rhode Island" dated July 7, 2000.

## 5.2 Chemicals of Concern Monitoring

Twelve wells were sampled as part of the semiannual sampling episode. The wells are divided into three main groups; shown on the Location Map in Section iii of this report. The COC analytical results are tabulated and included in Table 2 at the end of this section.

Discussion of the COC results:

Three wells are designated upgradient to the bulkhead wells and show no exceedances in any MPS.

The results of the 6 Bulkhead wells are similar to the previous sampling event. In this recent sampling 3 wells were found to have exceedances in one or both of the following contaminants: 1,2-dichlorobenzene or chlorobenzene.

Two of the 3 In-River wells showed exceedances in either 1,2-dichlorobenzene or chlorobenzene. The presence of these contaminants is unusual in that since initiating semiannual monitoring in March 1996, the 3 In-River wells have not exceeded any MPS for any of the COC. This recent change in the groundwater matrix may be a result of modified pumping e.g., additional extraction well 130, however, continue monitoring will look for any trends.

**Table 2**

**Monitoring Results for September 21-20, 2000**  
**Chemicals Of Concern**  
**(as ppb)**

Well Location	Well Number	MPS	94 1,2-Dichloro-Benzene	1700 Chloro-Benzene	1500 o-Chloro-Toluene	1700 Toluene	76 Xylenes
Upgradient	MW-004S		30 U	30 U	30 U	30 U	30 U
	MW-012S		1 U	1 U	1 U	1 U	1
	MW-021S		500 U	500 U	500 U	500 U	500 U
Bulkhead	MW-001S		450	2500	1 U	1 U	1 U
	MW-002S		930	9400	500 U	500 U	500 U
	P-035S		6600	500 U	500 U	500 U	500 U
	P-036S		30 U	300	30 U	30 U	30 U
	P-037S		30 U	370	30 U	30 U	30 U
	P-038S		1 U	1	1 U	1 U	1 U
In-River	SW-110		100 U	2000	100 U	820	100 U
	SW-120		9100	500 U	500 U	500 U	500 U
	SW-130		5 U	5 U	5 U	5 U	5 U

U = Nondetect with detection limit given

J = Estimated value

MPS Exceedance

## 6.0 DISCUSSION OF RESULTS

The September 2000, Certificate of Analysis by R.I. Analytical is included in Appendix B. The cumulative results from 1996 to the present for 12 wells and 5 COC are included as Tables 3, 4, and 5 in Appendices C, D, and E respectively. The cumulative results of each COC are plotted as Time-Series graphs for a better perception of trends, if any, over the sampling history since the inception of the groundwater extraction system in September 1995. These plots are also found in the respective Appendices C, D, and E.

A review of upgradient wells shows non-detect for the 5 COC.

Trends in concentration are not apparent at the 6 bulkhead wells (Table 4, Appendix D). The MPSs are being exceeded in wells MW-001S, MW-002S, and P-35S where concentrations of 1,2-dichlorobenzene and chlorobenzene are now elevated for the last two sampling episodes.

The 3 In-River wells (Table 5, Appendix E) are generally low to non-detect for contamination, however, this last sampling event has pronounced concentrations of 1,2-dichlorobenzene and chlorobenzene at 2 of the wells. These concentrations will need confirmation in future analyses.

## 7.0 CONCLUSION

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Groundwater quality as measured by the exceedance in MPSs for groundwater monitoring in the former Production Area has improved over time, but remains under pressure because of 1,2-dichlorobenzene and chlorobenzene presence. Ciba has established hydraulic control by capture of contaminated groundwater passing by the bulkhead to the Pawtuxet River with the presence of 3 capture wells. This capture can be viewed in Figure 2, Appendix A,

The next well sampling is scheduled for April 2001.

**APPENDIX A**  
**TABULATED**  
**GROUNDWATER ELEVATION DATA**  
**AND**  
**POTENTIOMETRIC CONTOURS**

**CIBA SPECIALTY CHEMICALS CORPORATION**  
**(FORMERLY CIBA-GEIGY CORPORATION)**  
**180 MILL STREET**  
**CRANSTON, RI**

**GROUNDWATER MONITORING**

October 3, 2000      September 30, 1993

MONITORING WELL	TOC MSL FEET	TOC TO WATER FEET	GW ELEVATION MSL FEET	GW ELEVATION MSL FEET
PW-110	15.72	20.30	-4.58	NA
PW-120	14.25	17.10	-2.85	NA
PW-130	16.59	22.38	-5.79	NA
MW-001S	15.04	8.40	6.64	9.39
MW-002S	14.46	8.58	5.88	9.21
MW-003S	16.61	8.45	8.16	7.96
MW-004S	21.29	11.50	9.79	10.72
MW-010S	22.62	12.06	10.56	11.34
MW-012S	22.54	12.38	10.16	10.54
MW-013S	18.44	10.39	8.05	9.83
MW-020S	21.94	11.26	10.68	11.53
MW-022S	16.87	8.24	8.63	9.63
MW-023S	20.71	11.52	9.19	9.41
MW-024S	21.04	9.95	11.09	10.89
MW-034S	18.85	9.30	9.55	10.4
P-001S	16.41	10.29	6.12	9.17
P-002S	13.85	7.72	6.13	8.38
P-003S	15.45	8.40	7.05	7.09
P-004S	19.92	9.43	10.49	11.07
P-005S	21.18	11.75	9.43	10.68
P-006S	23.62	13.88	9.74	10.39
P-034S	17.15	8.32	8.83	10.12
P-035S	15.32	9.64	5.68	8.51
P-036S	15.91	10.16	5.75	8.62
P-037S	15.69	10.59	5.1	8.96
P-038S	16.19	8.44	7.75	8.74

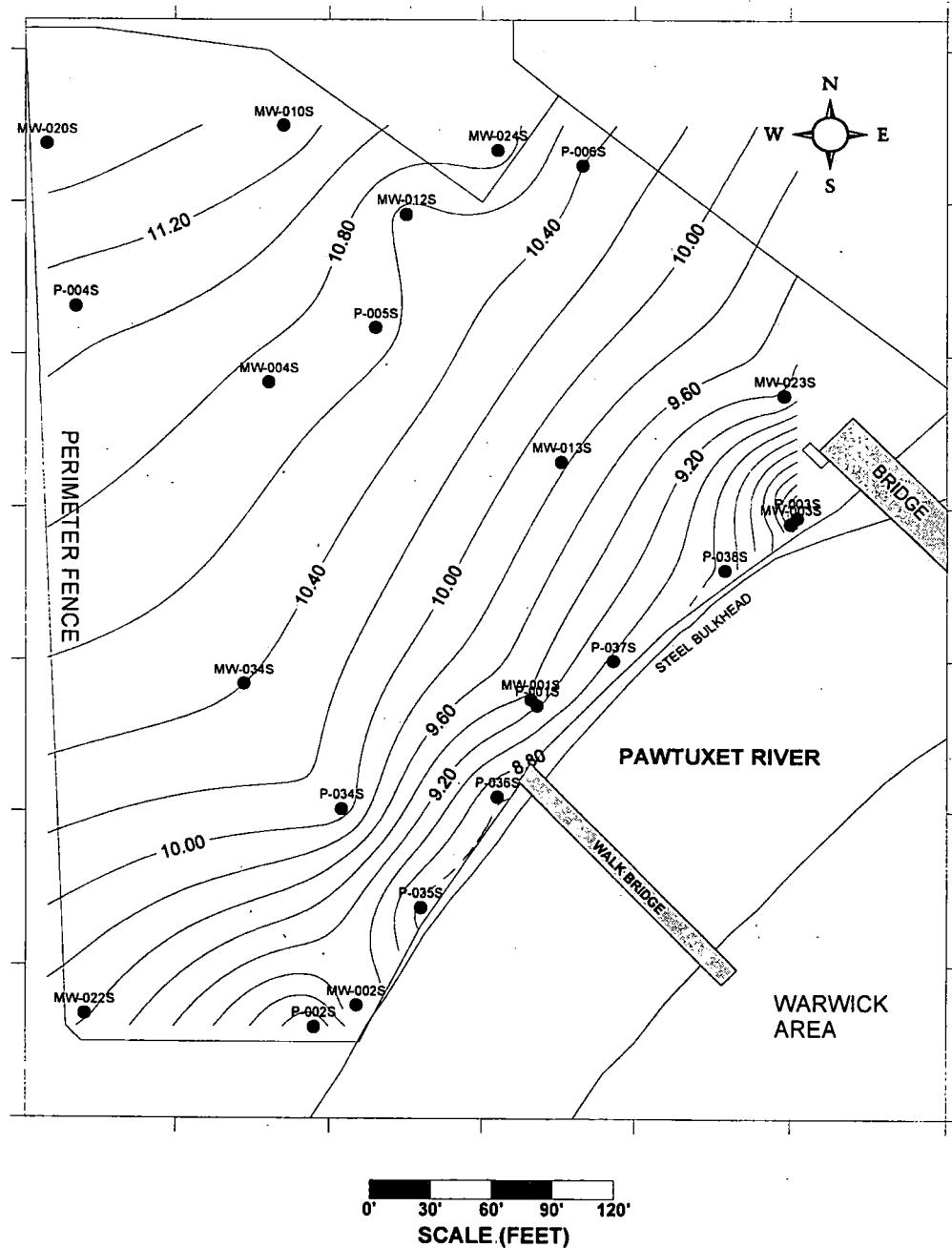
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NA - Not Available

Figure 1

CIBA SPECIALTY CHEMICALS CORPORATION  
CRANSTON, RI FACILITY  
FORMER PRODUCTION AREA

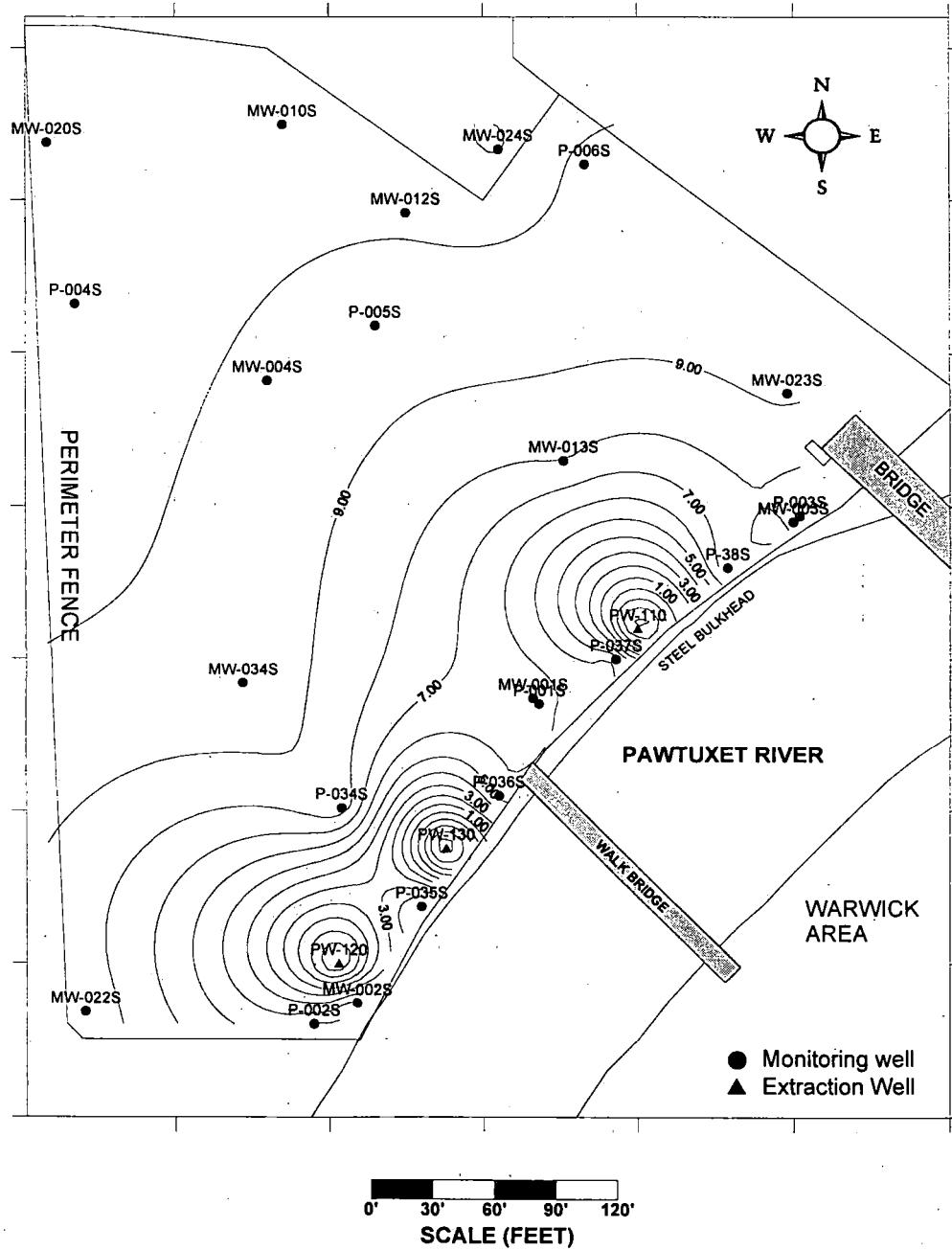
Pre-Pump & Treat Potentiometric Surface Map  
September 30, 1993



**Figure 2**

**CIBA SPECIALTY CHEMICALS CORPORATION  
CRANSTON, RI FACILITY  
FORMER PRODUCTION AREA**

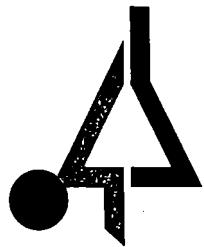
**Potentiometric Surface Map  
October 3, 2000**



**APPENDIX B**

**CERTIFICATE OF ANALYSIS**

**R. I. ANALYTICAL**



# R.I. Analytical

Specialists in Environmental Services

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
Attn: Mr. Barry Cohen  
Environmental Building #743  
Route 37 West  
Toms River, NJ 08754

Date Received: 9/22/00  
Date Reported: 10/11/00  
P.O. #: T0091248  
Work Order #: 0009-11589

---

**DESCRIPTION:** CIBA GEIGY SITE ON MILL ST., CRAN.-MW'S COLLECTED BY RIAL

---

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

**Reference:** All parameters were analyzed by U.S. EPA approved methodologies. The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015  
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we may be of further assistance, please contact us.

Approved by:

James E. Midd  
Vice President

enc: Chain of Custody

Paul Perrotti  
Data Reporting Manager

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 001

SAMPLE DESCRIPTION: MW-02S GRAB 09/21/00 @0930

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.7		SU	EPA 150.1	9/21/00 9:30	PAP
TEMPERATURE (field)	69		F	EPA 170.1	9/21/00 9:30	PAP
SPECIFIC CONDUCTANCE	620	1	µMHOS/CM	EPA 120.1	9/21/00 9:30	PAP
Dissolved Oxygen	<1.0	1.0	mg/l	EPA 360.1	9/21/00 9:30	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<5000	5000	ug/l	8240	10/04/00 9:22	MT
bromomethane	<5000	5000	ug/l	8240	10/04/00 9:22	MT
vinyl chloride	<500	500	ug/l	8240	10/04/00 9:22	MT
dichlorodifluoromethane	<5000	5000	ug/l	8240	10/04/00 9:22	MT
chloroethane	<5000	5000	ug/l	8240	10/04/00 9:22	MT
methylene chloride	<3000	3000	ug/l	8240	10/04/00 9:22	MT
trichlorofluoromethane	<500	500	ug/l	8240	10/04/00 9:22	MT
1,1-dichloroethylene	<500	500	ug/l	8240	10/04/00 9:22	MT
1,1-dichloroethane	<500	500	ug/l	8240	10/04/00 9:22	MT
trans-1,2-dichloroethylene	<500	500	ug/l	8240	10/04/00 9:22	MT
chloroform	<500	500	ug/l	8240	10/04/00 9:22	MT
1,2-dichloroethane	<500	500	ug/l	8240	10/04/00 9:22	MT
1,1,1-Trichloroethane	<500	500	ug/l	8240	10/04/00 9:22	MT
carbon tetrachloride	<500	500	ug/l	8240	10/04/00 9:22	MT
bromodichloromethane	<500	500	ug/l	8240	10/04/00 9:22	MT
1,2-dichloropropane	<500	500	ug/l	8240	10/04/00 9:22	MT
cis-1,3-dichloropropylene	<500	500	ug/l	8240	10/04/00 9:22	MT
trichloroethylene	<500	500	ug/l	8240	10/04/00 9:22	MT
trans-1,3-dichloropropylene	<500	500	ug/l	8240	10/04/00 9:22	MT
1,1,2-Trichloroethane	<500	500	ug/l	8240	10/04/00 9:22	MT
Dibromo-chloromethane	<500	500	ug/l	8240	10/04/00 9:22	MT
Bromoform	<500	500	ug/l	8240	10/04/00 9:22	MT
Tetrachloroethylene	<500	500	ug/l	8240	10/04/00 9:22	MT
1,1,2,2-Tetrachloroethane	<500	500	ug/l	8240	10/04/00 9:22	MT
Chlorobenzene	9400	500	ug/l	8240	10/04/00 9:22	MT
2-chloroethyl vinyl ether	<1000	1000	ug/l	8240	10/04/00 9:22	MT
benzene	<500	500	ug/l	8240	10/04/00 9:22	MT
toluene	<500	500	ug/l	8240	10/04/00 9:22	MT
ethylbenzene	<500	500	ug/l	8240	10/04/00 9:22	MT
xylenes(Total)	<500	500	ug/l	8240	10/04/00 9:22	MT
acetone	<5000	5000	ug/l	8240	10/04/00 9:22	MT
carbon disulfide	<3000	3000	ug/l	8240	10/04/00 9:22	MT
2-butanone(MEK)	<5000	5000	ug/l	8240	10/04/00 9:22	MT
vinyl acetate	<25000	25000	ug/l	8240	10/04/00 9:22	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 001

MW-02S GRAB 09/21/00 @0930

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<25000	25000	ug/l	8240	10/04/00 9:22	MT
2-hexanone	<25000	25000	ug/l	8240	10/04/00 9:22	MT
Styrene	<500	500	ug/l	8240	10/04/00 9:22	MT
o-chlorotoluene	<500	500	ug/l	8240	10/04/00 9:22	MT
1,2-Dichlorobenzene	930	500	ug/l	8240	10/04/00 9:22	MT
1,3-Dichlorobenzene	<500	500	ug/l	8240	10/04/00 9:22	MT
1,4-Dichlorobenzene	<500	500	ug/l	8240	10/04/00 9:22	MT
Surrogates		RANGE		8240	10/04/00 9:22	MT
Dibromofluoromethane	89		86-118%	8240	10/04/00 9:22	MT
4-Bromofluorobenzene	87		86-115%	8240	10/04/00 9:22	MT
Toluene-D8	104		88-110%	8240	10/04/00 9:22	MT

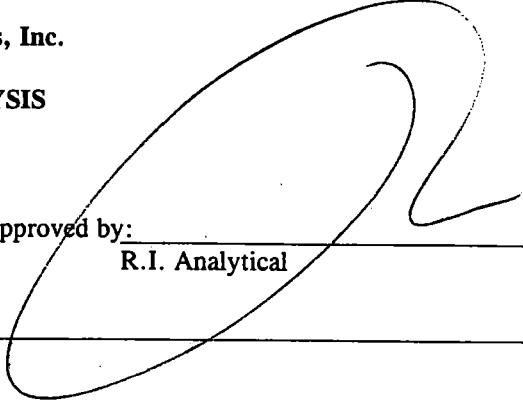
Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 9/22/00  
 Work Order # 0009-11589

Approved by:  
  
 R.I. Analytical

Sample #: 002

SAMPLE DESCRIPTION: SW-120 GRAB 09/21/00 @1105

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	7.0		SU	EPA 150.1	9/21/00 11:05	PAP
TEMPERATURE (field)	66.5		F	EPA 170.1	9/21/00 11:05	PAP
SPECIFIC CONDUCTANCE	230	1	µMHOS/CM	EPA 120.1	9/21/00 11:05	PAP
Dissolved Oxygen	<1.0	1.0	mg/l	EPA 360.1	9/21/00 11:05	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<5000	5000	ug/l	8240	10/04/00 10:01	MT
bromomethane	<5000	5000	ug/l	8240	10/04/00 10:01	MT
vinyl chloride	<500	500	ug/l	8240	10/04/00 10:01	MT
dichlorodifluoromethane	<5000	5000	ug/l	8240	10/04/00 10:01	MT
chloroethane	<5000	5000	ug/l	8240	10/04/00 10:01	MT
methylene chloride	<3000	3000	ug/l	8240	10/04/00 10:01	MT
trichlorofluoromethane	<500	500	ug/l	8240	10/04/00 10:01	MT
1,1-dichloroethylene	<500	500	ug/l	8240	10/04/00 10:01	MT
1,1-dichloroethane	<500	500	ug/l	8240	10/04/00 10:01	MT
trans-1,2-dichloroethylene	<500	500	ug/l	8240	10/04/00 10:01	MT
chloroform	<500	500	ug/l	8240	10/04/00 10:01	MT
1,2-dichloroethane	<500	500	ug/l	8240	10/04/00 10:01	MT
1,1,1-Trichloroethane	<500	500	ug/l	8240	10/04/00 10:01	MT
carbon tetrachloride	<500	500	ug/l	8240	10/04/00 10:01	MT
bromodichloromethane	<500	500	ug/l	8240	10/04/00 10:01	MT
1,2-dichloropropane	<500	500	ug/l	8240	10/04/00 10:01	MT
cis-1,3-dichloropropylene	<500	500	ug/l	8240	10/04/00 10:01	MT
trichloroethylene	<500	500	ug/l	8240	10/04/00 10:01	MT
trans-1,3-dichloropropylene	<500	500	ug/l	8240	10/04/00 10:01	MT
1,1,2-Trichloroethane	<500	500	ug/l	8240	10/04/00 10:01	MT
Dibromochloromethane	<500	500	ug/l	8240	10/04/00 10:01	MT
Bromoform	<500	500	ug/l	8240	10/04/00 10:01	MT
Tetrachloroethylene	<500	500	ug/l	8240	10/04/00 10:01	MT
1,1,2,2-Tetrachloroethane	<500	500	ug/l	8240	10/04/00 10:01	MT
Chlorobenzene	1800	500	ug/l	8240	10/04/00 10:01	MT
2-chloroethyl vinyl ether	<1000	1000	ug/l	8240	10/04/00 10:01	MT
benzene	<500	500	ug/l	8240	10/04/00 10:01	MT
toluene	<500	500	ug/l	8240	10/04/00 10:01	MT
ethylbenzene	<500	500	ug/l	8240	10/04/00 10:01	MT
xylenes(Total)	<500	500	ug/l	8240	10/04/00 10:01	MT
acetone	<5000	5000	ug/l	8240	10/04/00 10:01	MT
carbon disulfide	<3000	3000	ug/l	8240	10/04/00 10:01	MT
2-butanone(MEK)	<5000	5000	ug/l	8240	10/04/00 10:01	MT
vinyl acetate	<25000	25000	ug/l	8240	10/04/00 10:01	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 002

SW-120 GRAB 09/21/00 @1105

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<25000	25000	ug/l	8240	10/04/00 10:01	MT
2-hexanone	<25000	25000	ug/l	8240	10/04/00 10:01	MT
Styrene	<500	500	ug/l	8240	10/04/00 10:01	MT
o-chlorotoluene	<500	500	ug/l	8240	10/04/00 10:01	MT
1,2-Dichlorobenzene	9100	500	ug/l	8240	10/04/00 10:01	MT
1,3-Dichlorobenzene	<500	500	ug/l	8240	10/04/00 10:01	MT
1,4-Dichlorobenzene	<500	500	ug/l	8240	10/04/00 10:01	MT
Surrogates		RANGE		8240	10/04/00 10:01	MT
Dibromofluoromethane	90		86-118%	8240	10/04/00 10:01	MT
4-Bromofluorobenzene	95		86-115%	8240	10/04/00 10:01	MT
Toluene-D8	108		88-110%	8240	10/04/00 10:01	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 003

SAMPLE DESCRIPTION: P-35S GRAB 09/21/00 @1035

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.9		SU	EPA 150.1	9/21/00 10:35	PAP
TEMPERATURE (field)	67.9		F	EPA 170.1	9/21/00 10:35	PAP
SPECIFIC CONDUCTANCE	501	1	µMHOS/CM	EPA 120.1	9/21/00 10:35	PAP
Dissolved Oxygen	< 1.0	1.0	mg/l	EPA 360.1	9/21/00 10:35	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	< 5000	5000	ug/l	8240	10/04/00 10:41	MT
bromomethane	< 5000	5000	ug/l	8240	10/04/00 10:41	MT
vinyl chloride	< 500	500	ug/l	8240	10/04/00 10:41	MT
dichlorodifluoromethane	< 5000	5000	ug/l	8240	10/04/00 10:41	MT
chloroethane	< 5000	5000	ug/l	8240	10/04/00 10:41	MT
ethylene chloride	< 3000	3000	ug/l	8240	10/04/00 10:41	MT
trichlorofluoromethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,1-dichloroethylene	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,1-dichloroethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
trans-1,2-dichloroethylene	< 500	500	ug/l	8240	10/04/00 10:41	MT
chloroform	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,2-dichloroethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,1,1-Trichloroethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
carbon tetrachloride	< 500	500	ug/l	8240	10/04/00 10:41	MT
bromodichloromethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,2-dichloropropane	< 500	500	ug/l	8240	10/04/00 10:41	MT
cis-1,3-dichloropropylene	< 500	500	ug/l	8240	10/04/00 10:41	MT
trichloroethylene	< 500	500	ug/l	8240	10/04/00 10:41	MT
trans-1,3-dichloropropylene	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,1,2-Trichloroethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
Dibromochloromethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
Bromoform	< 500	500	ug/l	8240	10/04/00 10:41	MT
Tetrachloroethylene	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,1,2,2-Tetrachloroethane	< 500	500	ug/l	8240	10/04/00 10:41	MT
Chlorobenzene	11000	500	ug/l	8240	10/04/00 10:41	MT
2-chloroethyl vinyl ether	< 1000	1000	ug/l	8240	10/04/00 10:41	MT
benzene	< 500	500	ug/l	8240	10/04/00 10:41	MT
toluene	< 500	500	ug/l	8240	10/04/00 10:41	MT
ethylbenzene	< 500	500	ug/l	8240	10/04/00 10:41	MT
ethylenes(Total)	< 500	500	ug/l	8240	10/04/00 10:41	MT
acetone	< 5000	5000	ug/l	8240	10/04/00 10:41	MT
carbon disulfide	< 3000	3000	ug/l	8240	10/04/00 10:41	MT
2-butanone(MEK)	< 5000	5000	ug/l	8240	10/04/00 10:41	MT
vinyl acetate	< 25000	25000	ug/l	8240	10/04/00 10:41	MT

**R.I. Analytical Laboratories, Inc.****CERTIFICATE OF ANALYSIS**

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 003

P-35S GRAB 09/21/00 @1035

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<25000	25000	ug/l	8240	10/04/00 10:41	MT
2-hexanone	<25000	25000	ug/l	8240	10/04/00 10:41	MT
Styrene	< 500	500	ug/l	8240	10/04/00 10:41	MT
o-chlorotoluene	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,2-Dichlorobenzene	6600	500	ug/l	8240	10/04/00 10:41	MT
1,3-Dichlorobenzene	< 500	500	ug/l	8240	10/04/00 10:41	MT
1,4-Dichlorobenzene	< 500	500	ug/l	8240	10/04/00 10:41	MT
Surrogates		RANGE		8240	10/04/00 10:41	MT
Dibromofluoromethane	110		86-118%	8240	10/04/00 10:41	MT
4-Bromofluorobenzene	106		86-115%	8240	10/04/00 10:41	MT
Toluene-D8	102		88-110%	8240	10/04/00 10:41	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 004

SAMPLE DESCRIPTION: P-36S GRAB 09/21/00 @1210

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	7.3		SU	EPA 150.1	9/21/00 12:10	PAP
TEMPERATURE (field)	68.2		F	EPA 170.1	9/21/00 12:10	PAP
SPECIFIC CONDUCTANCE	615	1	uMHOS/CM	EPA 120.1	9/21/00 12:10	PAP
Dissolved Oxygen	< 1.0	1.0	mg/l	EPA 360.1	9/21/00 12:10	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<250	250	ug/l	8240	10/03/00 17:05	MT
bromomethane	<250	250	ug/l	8240	10/03/00 17:05	MT
vinyl chloride	<30	30	ug/l	8240	10/03/00 17:05	MT
dichlorodifluoromethane	<250	250	ug/l	8240	10/03/00 17:05	MT
chloroethane	<250	250	ug/l	8240	10/03/00 17:05	MT
methylene chloride	<100	100	ug/l	8240	10/03/00 17:05	MT
trichlorofluoromethane	<30	30	ug/l	8240	10/03/00 17:05	MT
1,1-dichloroethylene	<30	30	ug/l	8240	10/03/00 17:05	MT
1,1-dichloroethane	<30	30	ug/l	8240	10/03/00 17:05	MT
trans-1,2-dichloroethylene	<30	30	ug/l	8240	10/03/00 17:05	MT
chloroform	<30	30	ug/l	8240	10/03/00 17:05	MT
1,2-dichloroethane	<30	30	ug/l	8240	10/03/00 17:05	MT
1,1,1-Trichloroethane	<30	30	ug/l	8240	10/03/00 17:05	MT
carbon tetrachloride	<30	30	ug/l	8240	10/03/00 17:05	MT
bromodichloromethane	<30	30	ug/l	8240	10/03/00 17:05	MT
1,2-dichloropropane	<30	30	ug/l	8240	10/03/00 17:05	MT
cis-1,3-dichloropropylene	<30	30	ug/l	8240	10/03/00 17:05	MT
trichloroethylene	<30	30	ug/l	8240	10/03/00 17:05	MT
trans-1,3-dichloropropylene	<30	30	ug/l	8240	10/03/00 17:05	MT
1,1,2-Trichloroethane	<30	30	ug/l	8240	10/03/00 17:05	MT
Dibromochloromethane	<30	30	ug/l	8240	10/03/00 17:05	MT
Bromoform	<30	30	ug/l	8240	10/03/00 17:05	MT
Tetrachloroethylene	<30	30	ug/l	8240	10/03/00 17:05	MT
1,1,2,2-Tetrachloroethane	<30	30	ug/l	8240	10/03/00 17:05	MT
Chlorobenzene	300	30	ug/l	8240	10/03/00 17:05	MT
2-chloroethyl vinyl ether	<50	50	ug/l	8240	10/03/00 17:05	MT
benzene	<30	30	ug/l	8240	10/03/00 17:05	MT
toluene	<30	30	ug/l	8240	10/03/00 17:05	MT
ethylbenzene	<30	30	ug/l	8240	10/03/00 17:05	MT
oluenes(Total)	<30	30	ug/l	8240	10/03/00 17:05	MT
acetone	<250	250	ug/l	8240	10/03/00 17:05	MT
carbon disulfide	<100	100	ug/l	8240	10/03/00 17:05	MT
2-butanone(MEK)	<250	250	ug/l	8240	10/03/00 17:05	MT
vinyl acetate	<1300	1300	ug/l	8240	10/03/00 17:05	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 004

P-36S GRAB 09/21/00 @1210

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<1300	1300	ug/l	8240	10/03/00 17:05	MT
2-hexanone	<1300	1300	ug/l	8240	10/03/00 17:05	MT
Styrene	<30	30	ug/l	8240	10/03/00 17:05	MT
o-chlorotoluene	<30	30	ug/l	8240	10/03/00 17:05	MT
1,2-Dichlorobenzene	<30	30	ug/l	8240	10/03/00 17:05	MT
1,3-Dichlorobenzene	<30	30	ug/l	8240	10/03/00 17:05	MT
1,4-Dichlorobenzene	<30	30	ug/l	8240	10/03/00 17:05	MT
Surrogates		RANGE		8240	10/03/00 17:05	MT
Dibromofluoromethane	101		86-118%	8240	10/03/00 17:05	MT
4-Bromofluorobenzene	88		86-115%	8240	10/03/00 17:05	MT
luene-D8	107		88-110%	8240	10/03/00 17:05	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 005

SAMPLE DESCRIPTION: MW-01S GRAB 09/21/00 @1305

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.5		SU	EPA 150.1	9/21/00 13:05	PAP
TEMPERATURE (field)	65.3		F	EPA 170.1	9/21/00 13:05	PAP
SPECIFIC CONDUCTANCE	425	1	µMHOS/CM	EPA 120.1	9/21/00 13:05	PAP
Dissolved Oxygen	<1.0	1.0	mg/l	EPA 360.1	9/21/00 13:05	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<10	10	ug/l	8240	10/04/00 11:19	MT
bromomethane	<10	10	ug/l	8240	10/04/00 11:19	MT
vinyl chloride	<1	1	ug/l	8240	10/04/00 11:19	MT
dichlorodifluoromethane	<10	10	ug/l	8240	10/04/00 11:19	MT
chloroethane	<10	10	ug/l	8240	10/04/00 11:19	MT
methylene chloride	<5	5	ug/l	8240	10/04/00 11:19	MT
trichlorofluoromethane	<1	1	ug/l	8240	10/04/00 11:19	MT
1,1-dichloroethylene	<1	1	ug/l	8240	10/04/00 11:19	MT
1,1-dichloroethane	<1	1	ug/l	8240	10/04/00 11:19	MT
trans-1,2-dichloroethylene	<1	1	ug/l	8240	10/04/00 11:19	MT
chloroform	<1	1	ug/l	8240	10/04/00 11:19	MT
1,2-dichloroethane	<1	1	ug/l	8240	10/04/00 11:19	MT
1,1,1-Trichloroethane	<1	1	ug/l	8240	10/04/00 11:19	MT
carbon tetrachloride	<1	1	ug/l	8240	10/04/00 11:19	MT
bromodichloromethane	<1	1	ug/l	8240	10/04/00 11:19	MT
1,2-dichloropropane	<1	1	ug/l	8240	10/04/00 11:19	MT
cis-1,3-dichloropropylene	<1	1	ug/l	8240	10/04/00 11:19	MT
trichloroethylene	<1	1	ug/l	8240	10/04/00 11:19	MT
trans-1,3-dichloropropylene	<1	1	ug/l	8240	10/04/00 11:19	MT
1,1,2-Trichloroethane	<1	1	ug/l	8240	10/04/00 11:19	MT
Dibromochloromethane	<1	1	ug/l	8240	10/04/00 11:19	MT
Bromoform	<1	1	ug/l	8240	10/04/00 11:19	MT
Tetrachloroethylene	<1	1	ug/l	8240	10/04/00 11:19	MT
1,1,2,2-Tetrachloroethane	<1	1	ug/l	8240	10/04/00 11:19	MT
Chlorobenzene	2500	1	ug/l	8240	10/04/00 11:19	MT
2-chloroethyl vinyl ether	<2	2	ug/l	8240	10/04/00 11:19	MT
benzene	<1	1	ug/l	8240	10/04/00 11:19	MT
toluene	<1	1	ug/l	8240	10/04/00 11:19	MT
ethylbenzene	<1	1	ug/l	8240	10/04/00 11:19	MT
styrenes(Total)	<1	1	ug/l	8240	10/04/00 11:19	MT
acetone	<10	10	ug/l	8240	10/04/00 11:19	MT
carbon disulfide	<5	5	ug/l	8240	10/04/00 11:19	MT
2-butanone(MEK)	<10	10	ug/l	8240	10/04/00 11:19	MT
vinyl acetate	<50	50	ug/l	8240	10/04/00 11:19	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 005

MW-01S GRAB 09/21/00 @1305

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<50	50	ug/l	8240	10/04/00 11:19	MT
2-hexanone	<50	50	ug/l	8240	10/04/00 11:19	MT
Styrene	<1	1	ug/l	8240	10/04/00 11:19	MT
o-chlorotoluene	<1	1	ug/l	8240	10/04/00 11:19	MT
1,2-Dichlorobenzene	450	1	ug/l	8240	10/04/00 11:19	MT
1,3-Dichlorobenzene	<1	1	ug/l	8240	10/04/00 11:19	MT
1,4-Dichlorobenzene	<1	1	ug/l	8240	10/04/00 11:19	MT
Surrogates			RANGE	8240	10/04/00 11:19	MT
Dibromofluoromethane	96		86-118%	8240	10/04/00 11:19	MT
4-Bromofluorobenzene	93		86-115%	8240	10/04/00 11:19	MT
Blueene-D8	107		88-110%	8240	10/04/00 11:19	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 006

SAMPLE DESCRIPTION: SW-130 GRAB 09/21/00 @1140

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	7.0		SU	EPA 150.1	9/21/00 11:40	PAP
TEMPERATURE (field)	65.9		F	EPA 170.1	9/21/00 11:40	PAP
SPECIFIC CONDUCTANCE	227	1	µMHOS/CM	EPA 120.1	9/21/00 11:40	PAP
Dissolved Oxygen	2.1	1.0	mg/l	EPA 360.1	9/21/00 11:40	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<50	50	ug/l	8240	10/03/00 17:46	MT
bromomethane	<50	50	ug/l	8240	10/03/00 17:46	MT
vinyl chloride	<5	5	ug/l	8240	10/03/00 17:46	MT
dichlorodifluoromethane	<50	50	ug/l	8240	10/03/00 17:46	MT
chloroethane	<50	50	ug/l	8240	10/03/00 17:46	MT
methylene chloride	<30	30	ug/l	8240	10/03/00 17:46	MT
trichlorofluoromethane	<5	5	ug/l	8240	10/03/00 17:46	MT
1,1-dichloroethylene	<5	5	ug/l	8240	10/03/00 17:46	MT
1,1-dichloroethane	<5	5	ug/l	8240	10/03/00 17:46	MT
trans-1,2-dichloroethylene	<5	5	ug/l	8240	10/03/00 17:46	MT
chloroform	<5	5	ug/l	8240	10/03/00 17:46	MT
1,2-dichloroethane	<5	5	ug/l	8240	10/03/00 17:46	MT
1,1,1-Trichloroethane	<5	5	ug/l	8240	10/03/00 17:46	MT
carbon tetrachloride	<5	5	ug/l	8240	10/03/00 17:46	MT
bromodichloromethane	<5	5	ug/l	8240	10/03/00 17:46	MT
1,2-dichloropropane	<5	5	ug/l	8240	10/03/00 17:46	MT
cis-1,3-dichloropropylene	<5	5	ug/l	8240	10/03/00 17:46	MT
trichloroethylene	<5	5	ug/l	8240	10/03/00 17:46	MT
trans-1,3-dichloropropylene	<5	5	ug/l	8240	10/03/00 17:46	MT
1,1,2-Trichloroethane	<5	5	ug/l	8240	10/03/00 17:46	MT
Dibromochloromethane	<5	5	ug/l	8240	10/03/00 17:46	MT
Bromoform	<5	5	ug/l	8240	10/03/00 17:46	MT
Tetrachloroethylene	<5	5	ug/l	8240	10/03/00 17:46	MT
1,1,2,2-Tetrachloroethane	<5	5	ug/l	8240	10/03/00 17:46	MT
Chlorobenzene	<5	5	ug/l	8240	10/03/00 17:46	MT
2-chloroethyl vinyl ether	<10	10	ug/l	8240	10/03/00 17:46	MT
benzene	<5	5	ug/l	8240	10/03/00 17:46	MT
toluene	<5	5	ug/l	8240	10/03/00 17:46	MT
ethylbenzene	<5	5	ug/l	8240	10/03/00 17:46	MT
xylenes(Total)	<5	5	ug/l	8240	10/03/00 17:46	MT
acetone	<50	50	ug/l	8240	10/03/00 17:46	MT
carbon disulfide	<30	30	ug/l	8240	10/03/00 17:46	MT
2-butanone(MEK)	<50	50	ug/l	8240	10/03/00 17:46	MT
vinyl acetate	<300	300	ug/l	8240	10/03/00 17:46	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 006

SW-130 GRAB 09/21/00 @1140

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<300	300	ug/l	8240	10/03/00 17:46	MT
2-hexanone	<300	300	ug/l	8240	10/03/00 17:46	MT
Styrene	<5	5	ug/l	8240	10/03/00 17:46	MT
o-chlorotoluene	11	5	ug/l	8240	10/03/00 17:46	MT
1,2-Dichlorobenzene	<5	5	ug/l	8240	10/03/00 17:46	MT
1,3-Dichlorobenzene	<5	5	ug/l	8240	10/03/00 17:46	MT
1,4-Dichlorobenzene	<5	5	ug/l	8240	10/03/00 17:46	MT
Surrogates		RANGE		8240	10/03/00 17:46	MT
Dibromofluoromethane	98		86-118%	8240	10/03/00 17:46	MT
4-Bromofluorobenzene	92		86-115%	8240	10/03/00 17:46	MT
Toluene-D8	93		88-110%	8240	10/03/00 17:46	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 007

SAMPLE DESCRIPTION: P-37S GRAB 09/21/00 @1425

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	7.0		SU	EPA 150.1	9/21/00 14:25	PAP
TEMPERATURE (field)	70.3		F	EPA 170.1	9/21/00 14:25	PAP
SPECIFIC CONDUCTANCE	492	1	µMHOS/CM	EPA 120.1	9/21/00 14:25	PAP
Dissolved Oxygen	1.0	1.0	mg/l	EPA 360.1	9/21/00 14:25	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<250	250	ug/l	8240	10/03/00 18:25	MT
bromomethane	<250	250	ug/l	8240	10/03/00 18:25	MT
vinyl chloride	<30	30	ug/l	8240	10/03/00 18:25	MT
dichlorodifluoromethane	<250	250	ug/l	8240	10/03/00 18:25	MT
chloroethane	<250	250	ug/l	8240	10/03/00 18:25	MT
methylene chloride	<100	100	ug/l	8240	10/03/00 18:25	MT
trichlorofluoromethane	<30	30	ug/l	8240	10/03/00 18:25	MT
1,1-dichloroethylene	<30	30	ug/l	8240	10/03/00 18:25	MT
1,1-dichloroethane	<30	30	ug/l	8240	10/03/00 18:25	MT
trans-1,2-dichloroethylene	<30	30	ug/l	8240	10/03/00 18:25	MT
chloroform	<30	30	ug/l	8240	10/03/00 18:25	MT
1,2-dichloroethane	<30	30	ug/l	8240	10/03/00 18:25	MT
1,1,1-Trichloroethane	<30	30	ug/l	8240	10/03/00 18:25	MT
carbon tetrachloride	<30	30	ug/l	8240	10/03/00 18:25	MT
bromodichloromethane	<30	30	ug/l	8240	10/03/00 18:25	MT
1,2-dichloropropane	<30	30	ug/l	8240	10/03/00 18:25	MT
cis-1,3-dichloropropylene	<30	30	ug/l	8240	10/03/00 18:25	MT
trichloroethylene	<30	30	ug/l	8240	10/03/00 18:25	MT
trans-1,3-dichloropropylene	<30	30	ug/l	8240	10/03/00 18:25	MT
1,1,2-Trichloroethane	<30	30	ug/l	8240	10/03/00 18:25	MT
Dibromochloromethane	<30	30	ug/l	8240	10/03/00 18:25	MT
Bromoform	<30	30	ug/l	8240	10/03/00 18:25	MT
Tetrachloroethylene	<30	30	ug/l	8240	10/03/00 18:25	MT
1,1,2,2-Tetrachloroethane	<30	30	ug/l	8240	10/03/00 18:25	MT
Chlorobenzene	370	30	ug/l	8240	10/03/00 18:25	MT
2-chloroethyl vinyl ether	<50	50	ug/l	8240	10/03/00 18:25	MT
benzene	<30	30	ug/l	8240	10/03/00 18:25	MT
toluene	<30	30	ug/l	8240	10/03/00 18:25	MT
ethylbenzene	<30	30	ug/l	8240	10/03/00 18:25	MT
xylenes(Total)	<30	30	ug/l	8240	10/03/00 18:25	MT
acetone	<250	250	ug/l	8240	10/03/00 18:25	MT
carbon disulfide	<100	100	ug/l	8240	10/03/00 18:25	MT
2-butanone(MEK)	<250	250	ug/l	8240	10/03/00 18:25	MT
vinyl acetate	<1300	1300	ug/l	8240	10/03/00 18:25	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 9/22/00  
 Work Order # 0009-11589

Approved by: \_\_\_\_\_  
 R.I. Analytical

Sample #: 007

P-37S GRAB 09/21/00 @1425

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<1300	1300	ug/l	8240	10/03/00 18:25	MT
2-hexanone	<1300	1300	ug/l	8240	10/03/00 18:25	MT
Styrene	<30	30	ug/l	8240	10/03/00 18:25	MT
o-chlorotoluene	<30	30	ug/l	8240	10/03/00 18:25	MT
1,2-Dichlorobenzene	<30	30	ug/l	8240	10/03/00 18:25	MT
1,3-Dichlorobenzene	<30	30	ug/l	8240	10/03/00 18:25	MT
1,4-Dichlorobenzene	<30	30	ug/l	8240	10/03/00 18:25	MT
Surrogates		RANGE		8240	10/03/00 18:25	MT
Dibromofluoromethane	110		86-118%	8240	10/03/00 18:25	MT
4-Bromofluorobenzene	88		86-115%	8240	10/03/00 18:25	MT
oluene-D8	108		88-110%	8240	10/03/00 18:25	MT

Volatile organic analyses performed under the operating guidelines  
 method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 008

SAMPLE DESCRIPTION: SW-110 GRAB 09/21/00 @1505

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	7.1		SU	EPA 150.1	9/21/00 15:05	PAP
TEMPERATURE (field)	65.7		F	EPA 170.1	9/21/00 15:05	PAP
SPECIFIC CONDUCTANCE	324	1	µMHOS/CM	EPA 120.1	9/21/00 15:05	PAP
Dissolved Oxygen	1.7	1.0	mg/l	EPA 360.1	9/21/00 15:05	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<1000	1000	ug/l	8240	10/03/00 19:05	MT
bromomethane	<1000	1000	ug/l	8240	10/03/00 19:05	MT
vinyl chloride	<100	100	ug/l	8240	10/03/00 19:05	MT
dichlorodifluoromethane	<1000	1000	ug/l	8240	10/03/00 19:05	MT
chloroethane	<1000	1000	ug/l	8240	10/03/00 19:05	MT
methylene chloride	<500	500	ug/l	8240	10/03/00 19:05	MT
trichlorofluoromethane	<100	100	ug/l	8240	10/03/00 19:05	MT
1,1-dichloroethylene	<100	100	ug/l	8240	10/03/00 19:05	MT
1,1-dichloroethane	<100	100	ug/l	8240	10/03/00 19:05	MT
trans-1,2-dichloroethylene	<100	100	ug/l	8240	10/03/00 19:05	MT
chloroform	<100	100	ug/l	8240	10/03/00 19:05	MT
1,2-dichloroethane	<100	100	ug/l	8240	10/03/00 19:05	MT
1,1,1-Trichloroethane	<100	100	ug/l	8240	10/03/00 19:05	MT
carbon tetrachloride	<100	100	ug/l	8240	10/03/00 19:05	MT
bromodichloromethane	<100	100	ug/l	8240	10/03/00 19:05	MT
1,2-dichloropropane	<100	100	ug/l	8240	10/03/00 19:05	MT
cis-1,3-dichloropropylene	<100	100	ug/l	8240	10/03/00 19:05	MT
trichloroethylene	<100	100	ug/l	8240	10/03/00 19:05	MT
trans-1,3-dichloropropylene	<100	100	ug/l	8240	10/03/00 19:05	MT
1,1,2-Trichloroethane	<100	100	ug/l	8240	10/03/00 19:05	MT
Dibromochloromethane	<100	100	ug/l	8240	10/03/00 19:05	MT
Bromoform	<100	100	ug/l	8240	10/03/00 19:05	MT
Tetrachloroethylene	<100	100	ug/l	8240	10/03/00 19:05	MT
1,1,2,2-Tetrachloroethane	<100	100	ug/l	8240	10/03/00 19:05	MT
Chlorobenzene	2000	100	ug/l	8240	10/03/00 19:05	MT
2-chloroethyl vinyl ether	<200	200	ug/l	8240	10/03/00 19:05	MT
benzene	370	100	ug/l	8240	10/03/00 19:05	MT
toluene	820	100	ug/l	8240	10/03/00 19:05	MT
ethylbenzene	<100	100	ug/l	8240	10/03/00 19:05	MT
xylanes(Total)	<100	100	ug/l	8240	10/03/00 19:05	MT
acetone	<1000	1000	ug/l	8240	10/03/00 19:05	MT
carbon disulfide	<500	500	ug/l	8240	10/03/00 19:05	MT
2-butanone(MEK)	<1000	1000	ug/l	8240	10/03/00 19:05	MT
vinyl acetate	<5000	5000	ug/l	8240	10/03/00 19:05	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 008

SW-110 GRAB 09/21/00 @1505

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	< 5000	5000	ug/l	8240	10/03/00 19:05	MT
2-hexanone	< 5000	5000	ug/l	8240	10/03/00 19:05	MT
Styrene	< 100	100	ug/l	8240	10/03/00 19:05	MT
o-chlorotoluene	< 100	100	ug/l	8240	10/03/00 19:05	MT
1,2-Dichlorobenzene	< 100	100	ug/l	8240	10/03/00 19:05	MT
1,3-Dichlorobenzene	< 100	100	ug/l	8240	10/03/00 19:05	MT
1,4-Dichlorobenzene	< 100	100	ug/l	8240	10/03/00 19:05	MT
Surrogates		RANGE		8240	10/03/00 19:05	MT
Dibromofluoromethane	97		86-118%	8240	10/03/00 19:05	MT
4-Bromofluorobenzene	88		86-115%	8240	10/03/00 19:05	MT
Toluene-D8	99		88-110%	8240	10/03/00 19:05	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 009

SAMPLE DESCRIPTION: P-38S GRAB 09/21/00 @1535

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.5		SU	EPA 150.1	9/21/00 15:35	PAP
TEMPERATURE (field)	68.2		F	EPA 170.1	9/21/00 15:35	PAP
SPECIFIC CONDUCTANCE	275	1	uMHOS/CM	EPA 120.1	9/21/00 15:35	PAP
Dissolved Oxygen	2.6	1.0	mg/l	EPA 360.1	9/21/00 15:35	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<10	10	ug/l	8240	10/03/00 20:25	MT
bromomethane	<10	10	ug/l	8240	10/03/00 20:25	MT
vinyl chloride	<1	1	ug/l	8240	10/03/00 20:25	MT
dichlorodifluoromethane	<10	10	ug/l	8240	10/03/00 20:25	MT
chloroethane	<10	10	ug/l	8240	10/03/00 20:25	MT
methylene chloride	<5	5	ug/l	8240	10/03/00 20:25	MT
trichlorofluoromethane	<1	1	ug/l	8240	10/03/00 20:25	MT
1,1-dichloroethylene	<1	1	ug/l	8240	10/03/00 20:25	MT
1,1-dichloroethane	<1	1	ug/l	8240	10/03/00 20:25	MT
trans-1,2-dichloroethylene	<1	1	ug/l	8240	10/03/00 20:25	MT
chloroform	<1	1	ug/l	8240	10/03/00 20:25	MT
1,2-dichloroethane	<1	1	ug/l	8240	10/03/00 20:25	MT
1,1,1-Trichloroethane	<1	1	ug/l	8240	10/03/00 20:25	MT
carbon tetrachloride	<1	1	ug/l	8240	10/03/00 20:25	MT
bromodichloromethane	<1	1	ug/l	8240	10/03/00 20:25	MT
1,2-dichloropropane	<1	1	ug/l	8240	10/03/00 20:25	MT
cis-1,3-dichloropropylene	<1	1	ug/l	8240	10/03/00 20:25	MT
trichloroethylene	<1	1	ug/l	8240	10/03/00 20:25	MT
trans-1,3-dichloropropylene	<1	1	ug/l	8240	10/03/00 20:25	MT
1,1,2-Trichloroethane	<1	1	ug/l	8240	10/03/00 20:25	MT
Dibromochloromethane	<1	1	ug/l	8240	10/03/00 20:25	MT
Bromoform	<1	1	ug/l	8240	10/03/00 20:25	MT
Tetrachloroethylene	<1	1	ug/l	8240	10/03/00 20:25	MT
1,1,2,2-Tetrachloroethane	<1	1	ug/l	8240	10/03/00 20:25	MT
Chlorobenzene	1	1	ug/l	8240	10/03/00 20:25	MT
2-chloroethyl vinyl ether	<2	2	ug/l	8240	10/03/00 20:25	MT
benzene	<1	1	ug/l	8240	10/03/00 20:25	MT
toluene	<1	1	ug/l	8240	10/03/00 20:25	MT
ethylbenzene	<1	1	ug/l	8240	10/03/00 20:25	MT
xylenes(Total)	<1	1	ug/l	8240	10/03/00 20:25	MT
acetone	<10	10	ug/l	8240	10/03/00 20:25	MT
carbon disulfide	<5	5	ug/l	8240	10/03/00 20:25	MT
2-butanone(MEK)	<10	10	ug/l	8240	10/03/00 20:25	MT
vinyl acetate	<50	50	ug/l	8240	10/03/00 20:25	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 009

P-38S GRAB 09/21/00 @1535

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/03/00 20:25	MT
2-hexanone	< 50	50	ug/l	8240	10/03/00 20:25	MT
Styrene	< 1	1	ug/l	8240	10/03/00 20:25	MT
o-chlorotoluene	< 1	1	ug/l	8240	10/03/00 20:25	MT
1,2-Dichlorobenzene	< 1	1	ug/l	8240	10/03/00 20:25	MT
1,3-Dichlorobenzene	< 1	1	ug/l	8240	10/03/00 20:25	MT
1,4-Dichlorobenzene	< 1	1	ug/l	8240	10/03/00 20:25	MT
Surrogates		RANGE		8240	10/03/00 20:25	MT
Dibromofluoromethane	106		86-118%	8240	10/03/00 20:25	MT
4-Bromofluorobenzene	88		86-115%	8240	10/03/00 20:25	MT
Toluene-D8	108		88-110%	8240	10/03/00 20:25	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 010

SAMPLE DESCRIPTION: MW-12S GRAB 09/22/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.8		SU	EPA 150.1	9/22/00 9:00	PAP
TEMPERATURE (field)	63.9		F	EPA 170.1	9/22/00 9:00	PAP
SPECIFIC CONDUCTANCE	285	1	µMHOS/CM	EPA 120.1	9/22/00 9:00	PAP
Dissolved Oxygen	1.1	1.0	mg/l	EPA 360.1	9/22/00 9:00	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	< 10	10	ug/l	8240	10/05/00 14:50	MT
bromomethane	< 10	10	ug/l	8240	10/05/00 14:50	MT
vinyl chloride	< 1	1	ug/l	8240	10/05/00 14:50	MT
dichlorodifluoromethane	< 10	10	ug/l	8240	10/05/00 14:50	MT
propane	< 10	10	ug/l	8240	10/05/00 14:50	MT
methylene chloride	< 5	5	ug/l	8240	10/05/00 14:50	MT
trichlorofluoromethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,1-dichloroethylene	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,1-dichloroethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
trans-1,2-dichloroethylene	< 1	1	ug/l	8240	10/05/00 14:50	MT
chloroform	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,2-dichloroethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,1,1-Trichloroethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
carbon tetrachloride	< 1	1	ug/l	8240	10/05/00 14:50	MT
bromodichloromethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,2-dichloropropane	< 1	1	ug/l	8240	10/05/00 14:50	MT
cis-1,3-dichloropropylene	< 1	1	ug/l	8240	10/05/00 14:50	MT
trichloroethylene	14	1	ug/l	8240	10/05/00 14:50	MT
trans-1,3-dichloropropylene	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,1,2-Trichloroethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
Dibromochloromethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
Bromoform	< 1	1	ug/l	8240	10/05/00 14:50	MT
Tetrachloroethylene	3	1	ug/l	8240	10/05/00 14:50	MT
1,1,2,2-Tetrachloroethane	< 1	1	ug/l	8240	10/05/00 14:50	MT
Chlorobenzene	< 1	1	ug/l	8240	10/05/00 14:50	MT
2-chloroethyl vinyl ether	< 2	2	ug/l	8240	10/05/00 14:50	MT
benzene	< 1	1	ug/l	8240	10/05/00 14:50	MT
toluene	< 1	1	ug/l	8240	10/05/00 14:50	MT
ethylbenzene	< 1	1	ug/l	8240	10/05/00 14:50	MT
olefins(Total)	1	1	ug/l	8240	10/05/00 14:50	MT
acetone	< 10	10	ug/l	8240	10/05/00 14:50	MT
carbon disulfide	< 5	5	ug/l	8240	10/05/00 14:50	MT
2-butanone(MEK)	< 10	10	ug/l	8240	10/05/00 14:50	MT
vinyl acetate	< 50	50	ug/l	8240	10/05/00 14:50	MT

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 010

MW-12S GRAB 09/22/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/05/00 14:50	MT
2-hexanone	< 50	50	ug/l	8240	10/05/00 14:50	MT
Styrene	< 1	1	ug/l	8240	10/05/00 14:50	MT
o-chlorotoluene	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,2-Dichlorobenzene	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,3-Dichlorobenzene	< 1	1	ug/l	8240	10/05/00 14:50	MT
1,4-Dichlorobenzene	< 1	1	ug/l	8240	10/05/00 14:50	MT
Surrogates			RANGE	8240	10/05/00 14:50	MT
Dibromofluoromethane	94		86-118%	8240	10/05/00 14:50	MT
4-Bromofluorobenzene	99		86-115%	8240	10/05/00 14:50	MT
Toluene-D8	95		88-110%	8240	10/05/00 14:50	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 011

SAMPLE DESCRIPTION: MW-21S GRAB 09/22/00 @1000

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.5		SU	EPA 150.1	9/22/00 10:00	PAP
TEMPERATURE (field)	66.2		F	EPA 170.1	9/22/00 10:00	PAP
SPECIFIC CONDUCTANCE	298	1	µMHOS/CM	EPA 120.1	9/22/00 10:00	PAP
Dissolved Oxygen	1.9	1.0	mg/l	EPA 360.1	9/22/00 10:00	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<5000	5000	ug/l	8240	10/05/00 15:28	MT
bromomethane	<5000	5000	ug/l	8240	10/05/00 15:28	MT
vinyl chloride	<500	500	ug/l	8240	10/05/00 15:28	MT
chlorodifluoromethane	<5000	5000	ug/l	8240	10/05/00 15:28	MT
broethane	<5000	5000	ug/l	8240	10/05/00 15:28	MT
methylene chloride	<3000	3000	ug/l	8240	10/05/00 15:28	MT
trichlorofluoromethane	<500	500	ug/l	8240	10/05/00 15:28	MT
1,1-dichloroethylene	<500	500	ug/l	8240	10/05/00 15:28	MT
1,1-dichloroethane	<500	500	ug/l	8240	10/05/00 15:28	MT
trans-1,2-dichloroethylene	<500	500	ug/l	8240	10/05/00 15:28	MT
chloroform	<500	500	ug/l	8240	10/05/00 15:28	MT
1,2-dichloroethane	<500	500	ug/l	8240	10/05/00 15:28	MT
1,1,1-Trichloroethane	<500	500	ug/l	8240	10/05/00 15:28	MT
carbon tetrachloride	<500	500	ug/l	8240	10/05/00 15:28	MT
bromodichloromethane	<500	500	ug/l	8240	10/05/00 15:28	MT
1,2-dichloropropane	<500	500	ug/l	8240	10/05/00 15:28	MT
cis-1,3-dichloropropylene	<500	500	ug/l	8240	10/05/00 15:28	MT
trichloroethylene	<500	500	ug/l	8240	10/05/00 15:28	MT
trans-1,3-dichloropropylene	<500	500	ug/l	8240	10/05/00 15:28	MT
1,1,2-Trichloroethane	<500	500	ug/l	8240	10/05/00 15:28	MT
Dibromochloromethane	<500	500	ug/l	8240	10/05/00 15:28	MT
Bromoform	<500	500	ug/l	8240	10/05/00 15:28	MT
Tetrachloroethylene	<500	500	ug/l	8240	10/05/00 15:28	MT
1,1,2,2-Tetrachloroethane	<500	500	ug/l	8240	10/05/00 15:28	MT
Chlorobenzene	<500	500	ug/l	8240	10/05/00 15:28	MT
2-chloroethyl vinyl ether	<1000	1000	ug/l	8240	10/05/00 15:28	MT
benzene	<500	500	ug/l	8240	10/05/00 15:28	MT
toluene	<500	500	ug/l	8240	10/05/00 15:28	MT
ethylbenzene	<500	500	ug/l	8240	10/05/00 15:28	MT
oluenes(Total)	<500	500	ug/l	8240	10/05/00 15:28	MT
acetone	<5000	5000	ug/l	8240	10/05/00 15:28	MT
carbon disulfide	<3000	3000	ug/l	8240	10/05/00 15:28	MT
2-butanone(MEK)	<5000	5000	ug/l	8240	10/05/00 15:28	MT
vinyl acetate	<25000	25000	ug/l	8240	10/05/00 15:28	MT

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 011

MW-21S GRAB 09/22/00 @1000

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<25000	25000	ug/l	8240	10/05/00 15:28	MT
2-hexanone	<25000	25000	ug/l	8240	10/05/00 15:28	MT
Styrene	<500	500	ug/l	8240	10/05/00 15:28	MT
o-chlorotoluene	16000	500	ug/l	8240	10/05/00 15:28	MT
1,2-Dichlorobenzene	<500	500	ug/l	8240	10/05/00 15:28	MT
1,3-Dichlorobenzene	<500	500	ug/l	8240	10/05/00 15:28	MT
1,4-Dichlorobenzene	<500	500	ug/l	8240	10/05/00 15:28	MT
Surrogates		RANGE		8240	10/05/00 15:28	MT
Dibromofluoromethane	95		86-118%	8240	10/05/00 15:28	MT
4-Bromofluorobenzene	91		86-115%	8240	10/05/00 15:28	MT
uene-D8	101		88-110%	8240	10/05/00 15:28	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 012

SAMPLE DESCRIPTION: MW-04S GRAB 09/22/00 @0930

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.4		SU	EPA 150.1	9/22/00 9:30	PAP
TEMPERATURE (field)	65.2		F	EPA 170.1	9/22/00 9:30	PAP
SPECIFIC CONDUCTANCE	426	1	uMHOS/CM	EPA 120.1	9/22/00 9:30	PAP
Dissolved Oxygen	2.0	1.0	mg/l	EPA 360.1	9/22/00 9:30	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<250	250	ug/l	8240	10/04/00 12:44	MT
bromomethane	<250	250	ug/l	8240	10/04/00 12:44	MT
vinyl chloride	<30	30	ug/l	8240	10/04/00 12:44	MT
dichlorodifluoromethane	<250	250	ug/l	8240	10/04/00 12:44	MT
propane	<250	250	ug/l	8240	10/04/00 12:44	MT
ethylene chloride	<100	100	ug/l	8240	10/04/00 12:44	MT
trichlorofluoromethane	<30	30	ug/l	8240	10/04/00 12:44	MT
1,1-dichloroethylene	<30	30	ug/l	8240	10/04/00 12:44	MT
1,1-dichloroethane	<30	30	ug/l	8240	10/04/00 12:44	MT
trans-1,2-dichloroethylene	<30	30	ug/l	8240	10/04/00 12:44	MT
chloroform	<30	30	ug/l	8240	10/04/00 12:44	MT
1,2-dichloroethane	<30	30	ug/l	8240	10/04/00 12:44	MT
1,1,1-Trichloroethane	<30	30	ug/l	8240	10/04/00 12:44	MT
carbon tetrachloride	<30	30	ug/l	8240	10/04/00 12:44	MT
bromodichloromethane	<30	30	ug/l	8240	10/04/00 12:44	MT
1,2-dichloropropane	<30	30	ug/l	8240	10/04/00 12:44	MT
cis-1,3-dichloropropylene	<30	30	ug/l	8240	10/04/00 12:44	MT
trichloroethylene	<30	30	ug/l	8240	10/04/00 12:44	MT
trans-1,3-dichloropropylene	<30	30	ug/l	8240	10/04/00 12:44	MT
1,1,2-Trichloroethane	<30	30	ug/l	8240	10/04/00 12:44	MT
Dibromochloromethane	<30	30	ug/l	8240	10/04/00 12:44	MT
Bromoform	<30	30	ug/l	8240	10/04/00 12:44	MT
Tetrachloroethylene	<30	30	ug/l	8240	10/04/00 12:44	MT
1,1,2,2-Tetrachloroethane	<30	30	ug/l	8240	10/04/00 12:44	MT
Chlorobenzene	<30	30	ug/l	8240	10/04/00 12:44	MT
2-chloroethyl vinyl ether	<50	50	ug/l	8240	10/04/00 12:44	MT
benzene	<30	30	ug/l	8240	10/04/00 12:44	MT
toluene	<30	30	ug/l	8240	10/04/00 12:44	MT
ethylbenzene	<30	30	ug/l	8240	10/04/00 12:44	MT
benzenes(Total)	<30	30	ug/l	8240	10/04/00 12:44	MT
acetone	<250	250	ug/l	8240	10/04/00 12:44	MT
carbon disulfide	<100	100	ug/l	8240	10/04/00 12:44	MT
2-butanone(MEK)	<250	250	ug/l	8240	10/04/00 12:44	MT
vinyl acetate	<1300	1300	ug/l	8240	10/04/00 12:44	MT

R.I. Analytical Laboratories, Inc.

**CERTIFICATE OF ANALYSIS**

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 012

MW-04S GRAB 09/22/00 @0930

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<1300	1300	ug/l	8240	10/04/00 12:44	MT
2-hexanone	<1300	1300	ug/l	8240	10/04/00 12:44	MT
Styrene	<30	30	ug/l	8240	10/04/00 12:44	MT
o-chlorotoluene	240	30	ug/l	8240	10/04/00 12:44	MT
1,2-Dichlorobenzene	<30	30	ug/l	8240	10/04/00 12:44	MT
1,3-Dichlorobenzene	<30	30	ug/l	8240	10/04/00 12:44	MT
1,4-Dichlorobenzene	<30	30	ug/l	8240	10/04/00 12:44	MT
Surrogates		RANGE		8240	10/04/00 12:44	MT
Dibromofluoromethane	103		86-118%	8240	10/04/00 12:44	MT
4-Bromofluorobenzene	89		86-115%	8240	10/04/00 12:44	MT
Heptane-D8	106		88-110%	8240	10/04/00 12:44	MT

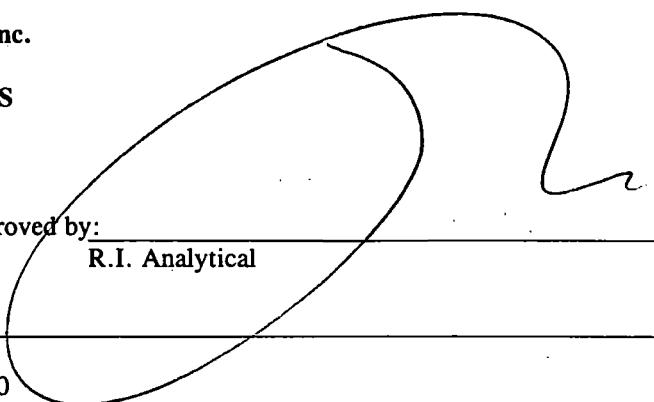
Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 9/22/00  
 Work Order # 0009-11589

Approved by:  
  
 R.I. Analytical

Sample #: 013

SAMPLE DESCRIPTION: TRIP BLANK GRAB 09/21/00 @0800

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
<b>Volatile Organic Compounds</b>						
chloromethane	< 10	10	ug/l	8240	10/03/00 23:12	MT
bromomethane	< 10	10	ug/l	8240	10/03/00 23:12	MT
vinyl chloride	< 1	1	ug/l	8240	10/03/00 23:12	MT
dichlorodifluoromethane	< 10	10	ug/l	8240	10/03/00 23:12	MT
chloroethane	< 10	10	ug/l	8240	10/03/00 23:12	MT
methylene chloride	< 5	5	ug/l	8240	10/03/00 23:12	MT
trichlorofluoromethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,1-dichloroethylene	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,1-dichloroethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
trans-1,2-dichloroethylene	< 1	1	ug/l	8240	10/03/00 23:12	MT
chloroform	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,2-dichloroethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,1,1-Trichloroethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
carbon tetrachloride	< 1	1	ug/l	8240	10/03/00 23:12	MT
bromodichloromethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,2-dichloropropane	< 1	1	ug/l	8240	10/03/00 23:12	MT
cis-1,3-dichloropropylene	< 1	1	ug/l	8240	10/03/00 23:12	MT
trichloroethylene	< 1	1	ug/l	8240	10/03/00 23:12	MT
trans-1,3-dichloropropylene	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,1,2-Trichloroethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
Dibromochlorofethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
Bromoform	< 1	1	ug/l	8240	10/03/00 23:12	MT
Tetrachloroethylene	< 1	1	ug/l	8240	10/03/00 23:12	MT
1,1,2,2-Tetrachloroethane	< 1	1	ug/l	8240	10/03/00 23:12	MT
Chlorobenzene	< 1	1	ug/l	8240	10/03/00 23:12	MT
2-chloroethyl vinyl ether	< 2	2	ug/l	8240	10/03/00 23:12	MT
benzene	< 1	1	ug/l	8240	10/03/00 23:12	MT
toluene	< 1	1	ug/l	8240	10/03/00 23:12	MT
ethylbenzene	< 1	1	ug/l	8240	10/03/00 23:12	MT
xylenes(Total)	< 1	1	ug/l	8240	10/03/00 23:12	MT
acetone	< 10	10	ug/l	8240	10/03/00 23:12	MT
carbon disulfide	< 5	5	ug/l	8240	10/03/00 23:12	MT
2-butanone(MEK)	< 10	10	ug/l	8240	10/03/00 23:12	MT
vinyl acetate	< 50	50	ug/l	8240	10/03/00 23:12	MT
4-methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/03/00 23:12	MT
2-hexanone	< 50	50	ug/l	8240	10/03/00 23:12	MT
Styrene	< 1	1	ug/l	8240	10/03/00 23:12	MT
o-chlorotoluene	< 1	1	ug/l	8240	10/03/00 23:12	MT

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 013

TRIP BLANK GRAB 09/21/00 @0800

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
1,2-Dichlorobenzene	<1	1	ug/l	8240	10/03/00 23:12	MT
1,3-Dichlorobenzene	<1	1	ug/l	8240	10/03/00 23:12	MT
1,4-Dichlorobenzene	<1	1	ug/l	8240	10/03/00 23:12	MT
Surrogates			RANGE	8240	10/03/00 23:12	MT
Dibromofluoromethane	94		86-118%	8240	10/03/00 23:12	MT
4-Bromofluorobenzene	89		86-115%	8240	10/03/00 23:12	MT
Toluene-D8	109		88-110%	8240	10/03/00 23:12	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 014

SAMPLE DESCRIPTION: EQUIPMENT BLANK GRAB 09/21/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
<b>Volatile Organic Compounds</b>						
chloromethane	< 10	10	ug/l	8240	10/04/00 11:58	MT
bromomethane	< 10	10	ug/l	8240	10/04/00 11:58	MT
vinyl chloride	< 1	1	ug/l	8240	10/04/00 11:58	MT
dichlorodifluoromethane	< 10	10	ug/l	8240	10/04/00 11:58	MT
chloroethane	< 10	10	ug/l	8240	10/04/00 11:58	MT
methylene chloride	< 5	5	ug/l	8240	10/04/00 11:58	MT
trichlorofluoromethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,1-dichloroethylene	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,1-dichloroethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
trans-1,2-dichloroethylene	< 1	1	ug/l	8240	10/04/00 11:58	MT
chloroform	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,2-dichloroethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,1,1-Trichloroethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
carbon tetrachloride	< 1	1	ug/l	8240	10/04/00 11:58	MT
bromodichloromethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,2-dichloropropane	< 1	1	ug/l	8240	10/04/00 11:58	MT
cis-1,3-dichloropropylene	< 1	1	ug/l	8240	10/04/00 11:58	MT
trichloroethylene	< 1	1	ug/l	8240	10/04/00 11:58	MT
trans-1,3-dichloropropylene	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,1,2-Trichloroethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
Dibromochloromethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
Bromoform	< 1	1	ug/l	8240	10/04/00 11:58	MT
Tetrachloroethylene	< 1	1	ug/l	8240	10/04/00 11:58	MT
1,1,2,2-Tetrachloroethane	< 1	1	ug/l	8240	10/04/00 11:58	MT
Chlorobenzene	< 1	1	ug/l	8240	10/04/00 11:58	MT
2-chloroethyl vinyl ether	< 2	2	ug/l	8240	10/04/00 11:58	MT
benzene	< 1	1	ug/l	8240	10/04/00 11:58	MT
toluene	< 1	1	ug/l	8240	10/04/00 11:58	MT
ethylbenzene	< 1	1	ug/l	8240	10/04/00 11:58	MT
xylenes(Total)	< 1	1	ug/l	8240	10/04/00 11:58	MT
acetone	< 10	10	ug/l	8240	10/04/00 11:58	MT
carbon disulfide	< 5	5	ug/l	8240	10/04/00 11:58	MT
2-butanone(MEK)	< 10	10	ug/l	8240	10/04/00 11:58	MT
ethyl acetate	< 50	50	ug/l	8240	10/04/00 11:58	MT
1-methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/04/00 11:58	MT
2-hexanone	< 50	50	ug/l	8240	10/04/00 11:58	MT
Styrene	< 1	1	ug/l	8240	10/04/00 11:58	MT
o-chlorotoluene	< 1	1	ug/l	8240	10/04/00 11:58	MT

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 9/22/00  
 Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 014

## EQUIPMENT BLANK GRAB 09/21/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
1,2-Dichlorobenzene	<1	1	ug/l	8240	10/04/00 11:58	MT
1,3-Dichlorobenzene	<1	1	ug/l	8240	10/04/00 11:58	MT
1,4-Dichlorobenzene	<1	1	ug/l	8240	10/04/00 11:58	MT
Surrogates			RANGE	8240	10/04/00 11:58	MT
Dibromofluoromethane	100		86-118%	8240	10/04/00 11:58	MT
4-Bromofluorobenzene	90		86-115%	8240	10/04/00 11:58	MT
Toluene-D8	107		88-110%	8240	10/04/00 11:58	MT

Volatile organic analyses performed under the operating guidelines  
 method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 015

SAMPLE DESCRIPTION: TRIP BLANK GRAB 09/22/00 @0800

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
<b>Volatile Organic Compounds</b>						
chloromethane	<10	10	ug/l	8240	10/05/00 16:07	MT
bromomethane	<10	10	ug/l	8240	10/05/00 16:07	MT
vinyl chloride	<1	1	ug/l	8240	10/05/00 16:07	MT
dichlorodifluoromethane	<10	10	ug/l	8240	10/05/00 16:07	MT
chloroethane	<10	10	ug/l	8240	10/05/00 16:07	MT
methylene chloride	<5	5	ug/l	8240	10/05/00 16:07	MT
trichlorofluoromethane	<1	1	ug/l	8240	10/05/00 16:07	MT
1,1-dichloroethylene	<1	1	ug/l	8240	10/05/00 16:07	MT
1,1-dichloroethane	<1	1	ug/l	8240	10/05/00 16:07	MT
trans-1,2-dichloroethylene	<1	1	ug/l	8240	10/05/00 16:07	MT
chloroform	<1	1	ug/l	8240	10/05/00 16:07	MT
1,2-dichloroethane	<1	1	ug/l	8240	10/05/00 16:07	MT
1,1,1-Trichloroethane	<1	1	ug/l	8240	10/05/00 16:07	MT
carbon tetrachloride	<1	1	ug/l	8240	10/05/00 16:07	MT
bromodichloromethane	<1	1	ug/l	8240	10/05/00 16:07	MT
1,2-dichloropropane	<1	1	ug/l	8240	10/05/00 16:07	MT
cis-1,3-dichloropropylene	<1	1	ug/l	8240	10/05/00 16:07	MT
trichloroethylene	<1	1	ug/l	8240	10/05/00 16:07	MT
trans-1,3-dichloropropylene	<1	1	ug/l	8240	10/05/00 16:07	MT
1,1,2-Trichloroethane	<1	1	ug/l	8240	10/05/00 16:07	MT
Dibromochloromethane	<1	1	ug/l	8240	10/05/00 16:07	MT
Bromoform	<1	1	ug/l	8240	10/05/00 16:07	MT
Tetrachloroethylene	<1	1	ug/l	8240	10/05/00 16:07	MT
1,1,2,2-Tetrachloroethane	<1	1	ug/l	8240	10/05/00 16:07	MT
Chlorobenzene	<1	1	ug/l	8240	10/05/00 16:07	MT
2-chloroethyl vinyl ether	<2	2	ug/l	8240	10/05/00 16:07	MT
benzene	<1	1	ug/l	8240	10/05/00 16:07	MT
toluene	<1	1	ug/l	8240	10/05/00 16:07	MT
ethylbenzene	<1	1	ug/l	8240	10/05/00 16:07	MT
xylenes(Total)	<1	1	ug/l	8240	10/05/00 16:07	MT
acetone	<10	10	ug/l	8240	10/05/00 16:07	MT
carbon disulfide	<5	5	ug/l	8240	10/05/00 16:07	MT
2-butanone(MEK)	<10	10	ug/l	8240	10/05/00 16:07	MT
ethyl acetate	<50	50	ug/l	8240	10/05/00 16:07	MT
methyl-2-pentanone(MIBK)	<50	50	ug/l	8240	10/05/00 16:07	MT
2-hexanone	<50	50	ug/l	8240	10/05/00 16:07	MT
Styrene	<1	1	ug/l	8240	10/05/00 16:07	MT
o-chlorotoluene	<1	1	ug/l	8240	10/05/00 16:07	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 015

TRIP BLANK GRAB 09/22/00 @0800

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
1,2-Dichlorobenzene	<1	1	ug/l	8240	10/05/00 16:07	MT
1,3-Dichlorobenzene	<1	1	ug/l	8240	10/05/00 16:07	MT
1,4-Dichlorobenzene	<1	1	ug/l	8240	10/05/00 16:07	MT
Surrogates			RANGE	8240	10/05/00 16:07	MT
Dibromofluoromethane	104		86-118%	8240	10/05/00 16:07	MT
4-Bromofluorobenzene	92		86-115%	8240	10/05/00 16:07	MT
Toluene-D8	102		88-110%	8240	10/05/00 16:07	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 016

SAMPLE DESCRIPTION: EQUIPMENT BLANK GRAB 09/22/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
<b>Volatile Organic Compounds</b>						
chloromethane	< 10	10	ug/l	8240	10/06/00 8:01	MT
bromomethane	< 10	10	ug/l	8240	10/06/00 8:01	MT
vinyl chloride	< 1	1	ug/l	8240	10/06/00 8:01	MT
dichlorodifluoromethane	< 10	10	ug/l	8240	10/06/00 8:01	MT
chloroethane	< 10	10	ug/l	8240	10/06/00 8:01	MT
methylene chloride	< 5	5	ug/l	8240	10/06/00 8:01	MT
trichlorofluoromethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,1-dichloroethylene	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,1-dichloroethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
trans-1,2-dichloroethylene	< 1	1	ug/l	8240	10/06/00 8:01	MT
chloroform	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,2-dichloroethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,1,1-Trichloroethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
carbon tetrachloride	< 1	1	ug/l	8240	10/06/00 8:01	MT
bromodichloromethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,2-dichloropropane	< 1	1	ug/l	8240	10/06/00 8:01	MT
cis-1,3-dichloropropylene	< 1	1	ug/l	8240	10/06/00 8:01	MT
trichloroethylene	< 1	1	ug/l	8240	10/06/00 8:01	MT
trans-1,3-dichloropropylene	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,1,2-Trichloroethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
Dibromochloromethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
Bromoform	< 1	1	ug/l	8240	10/06/00 8:01	MT
Tetrachloroethylene	< 1	1	ug/l	8240	10/06/00 8:01	MT
1,1,2,2-Tetrachloroethane	< 1	1	ug/l	8240	10/06/00 8:01	MT
Chlorobenzene	< 1	1	ug/l	8240	10/06/00 8:01	MT
2-chloroethyl vinyl ether	< 2	2	ug/l	8240	10/06/00 8:01	MT
benzene	< 1	1	ug/l	8240	10/06/00 8:01	MT
toluene	< 1	1	ug/l	8240	10/06/00 8:01	MT
ethylbenzene	< 1	1	ug/l	8240	10/06/00 8:01	MT
xylenes(Total)	< 1	1	ug/l	8240	10/06/00 8:01	MT
acetone	< 10	10	ug/l	8240	10/06/00 8:01	MT
carbon disulfide	< 5	5	ug/l	8240	10/06/00 8:01	MT
2-butanone(MEK)	< 10	10	ug/l	8240	10/06/00 8:01	MT
vinyl acetate	< 50	50	ug/l	8240	10/06/00 8:01	MT
4-methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/06/00 8:01	MT
2-hexanone	< 50	50	ug/l	8240	10/06/00 8:01	MT
Styrene	< 1	1	ug/l	8240	10/06/00 8:01	MT
o-chlorotoluene	< 1	1	ug/l	8240	10/06/00 8:01	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 016

EQUIPMENT BLANK GRAB 09/22/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
1,2-Dichlorobenzene	<1	1	ug/l	8240	10/06/00 8:01	MT
1,3-Dichlorobenzene	<1	1	ug/l	8240	10/06/00 8:01	MT
1,4-Dichlorobenzene	<1	1	ug/l	8240	10/06/00 8:01	MT
Surrogates			RANGE	8240	10/06/00 8:01	MT
Dibromofluoromethane	107		86-118%	8240	10/06/00 8:01	MT
4-Bromofluorobenzene	86		86-115%	8240	10/06/00 8:01	MT
Toluene-D8	103		88-110%	8240	10/06/00 8:01	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 017

SAMPLE DESCRIPTION: PW-110 GRAB 09/21/00 @1230

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.7		SU	EPA 150.1	9/21/00 12:30	PAP
TEMPERATURE (field)	61.7		F	EPA 170.1	9/21/00 12:30	PAP
SPECIFIC CONDUCTANCE	257	1	uMHOS/CM	EPA 120.1	9/21/00 12:30	PAP
Dissolved Oxygen	1.1	1.0	mg/l	EPA 360.1	9/21/00 12:30	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	< 100	100	ug/l	8240	10/03/00 21:48	MT
bromomethane	< 100	100	ug/l	8240	10/03/00 21:48	MT
vinyl chloride	< 10	10	ug/l	8240	10/03/00 21:48	MT
dichlorodifluoromethane	< 100	100	ug/l	8240	10/03/00 21:48	MT
propane	< 100	100	ug/l	8240	10/03/00 21:48	MT
methylene chloride	< 50	50	ug/l	8240	10/03/00 21:48	MT
trichlorofluoromethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,1-dichloroethylene	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,1-dichloroethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
trans-1,2-dichloroethylene	< 10	10	ug/l	8240	10/03/00 21:48	MT
chloroform	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,2-dichloroethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,1,1-Trichloroethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
carbon tetrachloride	< 10	10	ug/l	8240	10/03/00 21:48	MT
bromodichloromethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,2-dichloropropane	< 10	10	ug/l	8240	10/03/00 21:48	MT
cis-1,3-dichloropropylene	< 10	10	ug/l	8240	10/03/00 21:48	MT
trichloroethylene	< 10	10	ug/l	8240	10/03/00 21:48	MT
trans-1,3-dichloropropylene	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,1,2-Trichloroethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
Dibromochloromethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
Bromoform	< 10	10	ug/l	8240	10/03/00 21:48	MT
Tetrachloroethylene	< 10	10	ug/l	8240	10/03/00 21:48	MT
1,1,2,2-Tetrachloroethane	< 10	10	ug/l	8240	10/03/00 21:48	MT
Chlorobenzene	96	10	ug/l	8240	10/03/00 21:48	MT
2-chloroethyl vinyl ether	< 20	20	ug/l	8240	10/03/00 21:48	MT
benzene	< 10	10	ug/l	8240	10/03/00 21:48	MT
toluene	< 10	10	ug/l	8240	10/03/00 21:48	MT
ethylbenzene	< 10	10	ug/l	8240	10/03/00 21:48	MT
benzenes(Total)	< 10	10	ug/l	8240	10/03/00 21:48	MT
acetone	< 100	100	ug/l	8240	10/03/00 21:48	MT
carbon disulfide	< 50	50	ug/l	8240	10/03/00 21:48	MT
2-butanone(MEK)	< 100	100	ug/l	8240	10/03/00 21:48	MT
vinyl acetate	< 500	500	ug/l	8240	10/03/00 21:48	MT

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 9/22/00  
 Work Order # 0009-11589

Approved by:  
 R.I. Analytical

Sample #: 017

PW-110 GRAB 09/21/00 @1230

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<500	500	ug/l	8240	10/03/00 21:48	MT
2-hexanone	<500	500	ug/l	8240	10/03/00 21:48	MT
Styrene	<10	10	ug/l	8240	10/03/00 21:48	MT
o-chlorotoluene	93	10	ug/l	8240	10/03/00 21:48	MT
1,2-Dichlorobenzene	100	10	ug/l	8240	10/03/00 21:48	MT
1,3-Dichlorobenzene	<10	10	ug/l	8240	10/03/00 21:48	MT
1,4-Dichlorobenzene	<10	10	ug/l	8240	10/03/00 21:48	MT
Surrogates		RANGE		8240	10/03/00 21:48	MT
Dibromofluoromethane	102		86-118%	8240	10/03/00 21:48	MT
4-Bromofluorobenzene	91		86-115%	8240	10/03/00 21:48	MT
Styrene-D8	97		88-110%	8240	10/03/00 21:48	MT

Volatile organic analyses performed under the operating guidelines  
 method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 018

SAMPLE DESCRIPTION: PW-120 GRAB 09/21/00 @0955

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.7		SU	EPA 150.1	9/21/00 9:55	PAP
TEMPERATURE (field)	62.5		F	EPA 170.1	9/21/00 9:55	PAP
SPECIFIC CONDUCTANCE	340	1	µMHOS/CM	EPA 120.1	9/21/00 9:55	PAP
Dissolved Oxygen	1.7	1.0	mg/l	EPA 360.1	9/21/00 9:55	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<50	50	ug/l	8240	10/03/00 21:05	MT
bromomethane	<50	50	ug/l	8240	10/03/00 21:05	MT
vinyl chloride	<5	5	ug/l	8240	10/03/00 21:05	MT
dichlorodifluoromethane	<50	50	ug/l	8240	10/03/00 21:05	MT
propane	<50	50	ug/l	8240	10/03/00 21:05	MT
methylene chloride	<30	30	ug/l	8240	10/03/00 21:05	MT
trichlorofluoromethane	<5	5	ug/l	8240	10/03/00 21:05	MT
1,1-dichloroethylene	<5	5	ug/l	8240	10/03/00 21:05	MT
1,1-dichloroethane	<5	5	ug/l	8240	10/03/00 21:05	MT
trans-1,2-dichloroethylene	9	5	ug/l	8240	10/03/00 21:05	MT
chloroform	<5	5	ug/l	8240	10/03/00 21:05	MT
1,2-dichloroethane	<5	5	ug/l	8240	10/03/00 21:05	MT
1,1,1-Trichloroethane	<5	5	ug/l	8240	10/03/00 21:05	MT
carbon tetrachloride	<5	5	ug/l	8240	10/03/00 21:05	MT
bromodichloromethane	<5	5	ug/l	8240	10/03/00 21:05	MT
1,2-dichloropropane	<5	5	ug/l	8240	10/03/00 21:05	MT
cis-1,3-dichloropropylene	<5	5	ug/l	8240	10/03/00 21:05	MT
trichloroethylene	52	5	ug/l	8240	10/03/00 21:05	MT
trans-1,3-dichloropropylene	<5	5	ug/l	8240	10/03/00 21:05	MT
1,1,2-Trichloroethane	<5	5	ug/l	8240	10/03/00 21:05	MT
Dibromochloromethane	<5	5	ug/l	8240	10/03/00 21:05	MT
Bromoform	<5	5	ug/l	8240	10/03/00 21:05	MT
Tetrachloroethylene	57	5	ug/l	8240	10/03/00 21:05	MT
1,1,2,2-Tetrachloroethane	<5	5	ug/l	8240	10/03/00 21:05	MT
Chlorobenzene	2300	5	ug/l	8240	10/03/00 21:05	MT
2-chloroethyl vinyl ether	<10	10	ug/l	8240	10/03/00 21:05	MT
benzene	12	5	ug/l	8240	10/03/00 21:05	MT
toluene	44	5	ug/l	8240	10/03/00 21:05	MT
ethylbenzene	7	5	ug/l	8240	10/03/00 21:05	MT
enes(Total)	22	5	ug/l	8240	10/03/00 21:05	MT
acetone	<50	50	ug/l	8240	10/03/00 21:05	MT
carbon disulfide	<30	30	ug/l	8240	10/03/00 21:05	MT
2-butanone(MEK)	<50	50	ug/l	8240	10/03/00 21:05	MT
vinyl acetate	<300	300	ug/l	8240	10/03/00 21:05	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 018

PW-120 GRAB 09/21/00 @0955

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	<300	300	ug/l	8240	10/03/00 21:05	MT
2-hexanone	<300	300	ug/l	8240	10/03/00 21:05	MT
Styrene	<5	5	ug/l	8240	10/03/00 21:05	MT
o-chlorotoluene	88	5	ug/l	8240	10/03/00 21:05	MT
1,2-Dichlorobenzene	2000	5	ug/l	8240	10/03/00 21:05	MT
1,3-Dichlorobenzene	<5	5	ug/l	8240	10/03/00 21:05	MT
1,4-Dichlorobenzene	<5	5	ug/l	8240	10/03/00 21:05	MT
Surrogates		RANGE		8240	10/03/00 21:05	MT
Dibromofluoromethane	109		86-118%	8240	10/03/00 21:05	MT
4-Bromofluorobenzene	103		86-115%	8240	10/03/00 21:05	MT
Toluene-D8	104		88-110%	8240	10/03/00 21:05	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 019

SAMPLE DESCRIPTION: PW-130 GRAB 09/21/00 @1120

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
pH (field)	6.8		SU	EPA 150.1	9/21/00 11:20	PAP
TEMPERATURE (field)	63.5		F	EPA 170.1	9/21/00 11:20	PAP
SPECIFIC CONDUCTANCE	285	1	uMHOS/CM	EPA 120.1	9/21/00 11:20	PAP
Dissolved Oxygen	<1.0	1.0	mg/l	EPA 360.1	9/21/00 11:20	PAP
<b>Volatile Organic Compounds</b>						
chloromethane	<10	10	ug/l	8240	10/03/00 22:30	MT
bromomethane	<10	10	ug/l	8240	10/03/00 22:30	MT
vinyl chloride	<1	1	ug/l	8240	10/03/00 22:30	MT
dichlorodifluoromethane	<10	10	ug/l	8240	10/03/00 22:30	MT
chloroethane	<10	10	ug/l	8240	10/03/00 22:30	MT
methylene chloride	<5	5	ug/l	8240	10/03/00 22:30	MT
trichlorofluoromethane	<1	1	ug/l	8240	10/03/00 22:30	MT
1,1-dichloroethylene	<1	1	ug/l	8240	10/03/00 22:30	MT
1,1-dichloroethane	<1	1	ug/l	8240	10/03/00 22:30	MT
trans-1,2-dichloroethylene	<1	1	ug/l	8240	10/03/00 22:30	MT
chloroform	<1	1	ug/l	8240	10/03/00 22:30	MT
1,2-dichloroethane	<1	1	ug/l	8240	10/03/00 22:30	MT
1,1,1-Trichloroethane	<1	1	ug/l	8240	10/03/00 22:30	MT
carbon tetrachloride	<1	1	ug/l	8240	10/03/00 22:30	MT
bromodichloromethane	<1	1	ug/l	8240	10/03/00 22:30	MT
1,2-dichloropropane	<1	1	ug/l	8240	10/03/00 22:30	MT
cis-1,3-dichloropropylene	<1	1	ug/l	8240	10/03/00 22:30	MT
trichloroethylene	<1	1	ug/l	8240	10/03/00 22:30	MT
trans-1,3-dichloropropylene	<1	1	ug/l	8240	10/03/00 22:30	MT
1,1,2-Trichloroethane	<1	1	ug/l	8240	10/03/00 22:30	MT
Dibromochloromethane	<1	1	ug/l	8240	10/03/00 22:30	MT
Bromoform	<1	1	ug/l	8240	10/03/00 22:30	MT
Tetrachloroethylene	<1	1	ug/l	8240	10/03/00 22:30	MT
1,1,2,2-Tetrachloroethane	<1	1	ug/l	8240	10/03/00 22:30	MT
Chlorobenzene	370	1	ug/l	8240	10/03/00 22:30	MT
2-chloroethyl vinyl ether	<2	2	ug/l	8240	10/03/00 22:30	MT
benzene	11	1	ug/l	8240	10/03/00 22:30	MT
toluene	20	1	ug/l	8240	10/03/00 22:30	MT
ethylbenzene	<1	1	ug/l	8240	10/03/00 22:30	MT
benzenes(Total)	15	1	ug/l	8240	10/03/00 22:30	MT
acetone	<10	10	ug/l	8240	10/03/00 22:30	MT
carbon disulfide	<5	5	ug/l	8240	10/03/00 22:30	MT
2-butanone(MEK)	<10	10	ug/l	8240	10/03/00 22:30	MT
vinyl acetate	<50	50	ug/l	8240	10/03/00 22:30	MT

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 9/22/00  
 Work Order # 0009-11589

Approved by:  
 R.I. Analytical

Sample #: 019

PW-130 GRAB 09/21/00 @1120

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
4-methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/03/00 22:30	MT
2-hexanone	< 50	50	ug/l	8240	10/03/00 22:30	MT
Styrene	< 1	1	ug/l	8240	10/03/00 22:30	MT
o-chlorotoluene	180	1	ug/l	8240	10/03/00 22:30	MT
1,2-Dichlorobenzene	82	1	ug/l	8240	10/03/00 22:30	MT
1,3-Dichlorobenzene	< 1	1	ug/l	8240	10/03/00 22:30	MT
1,4-Dichlorobenzene	< 1	1	ug/l	8240	10/03/00 22:30	MT
Surrogates		RANGE		8240	10/03/00 22:30	MT
Dibromofluoromethane	103		86-118%	8240	10/03/00 22:30	MT
4-Bromofluorobenzene	95		86-115%	8240	10/03/00 22:30	MT
Toluene-D8	108		88-110%	8240	10/03/00 22:30	MT

Volatile organic analyses performed under the operating guidelines  
 method 8260.

Method 8240: Detection limits increased as a result of sample dilution. Sample dilution required to achieve target compound response within the calibration range of the analysis.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 020

SAMPLE DESCRIPTION: MW-12S DUPLICATE GRAB 09/22/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
<b>Volatile Organic Compounds</b>						
chloromethane	< 10	10	ug/l	8240	10/05/00 17:24	MT
bromomethane	< 10	10	ug/l	8240	10/05/00 17:24	MT
vinyl chloride	< 1	1	ug/l	8240	10/05/00 17:24	MT
dichlorodifluoromethane	< 10	10	ug/l	8240	10/05/00 17:24	MT
chloroethane	< 10	10	ug/l	8240	10/05/00 17:24	MT
methylene chloride	< 5	5	ug/l	8240	10/05/00 17:24	MT
trichlorofluoromethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,1-dichloroethylene	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,1-dichloroethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
trans-1,2-dichloroethylene	< 1	1	ug/l	8240	10/05/00 17:24	MT
chloroform	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,2-dichloroethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,1,1-Trichloroethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
carbon tetrachloride	< 1	1	ug/l	8240	10/05/00 17:24	MT
bromodichloromethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,2-dichloropropane	< 1	1	ug/l	8240	10/05/00 17:24	MT
cis-1,3-dichloropropylene	< 1	1	ug/l	8240	10/05/00 17:24	MT
trichloroethylene	< 1	1	ug/l	8240	10/05/00 17:24	MT
trans-1,3-dichloropropylene	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,1,2-Trichloroethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
Dibromochloromethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
Bromoform	< 1	1	ug/l	8240	10/05/00 17:24	MT
Tetrachloroethylene	< 1	1	ug/l	8240	10/05/00 17:24	MT
1,1,2,2-Tetrachloroethane	< 1	1	ug/l	8240	10/05/00 17:24	MT
Chlorobenzene	2	1	ug/l	8240	10/05/00 17:24	MT
2-chloroethyl vinyl ether	< 2	2	ug/l	8240	10/05/00 17:24	MT
benzene	< 1	1	ug/l	8240	10/05/00 17:24	MT
toluene	< 1	1	ug/l	8240	10/05/00 17:24	MT
ethylbenzene	1	1	ug/l	8240	10/05/00 17:24	MT
xylenes(Total)	2	1	ug/l	8240	10/05/00 17:24	MT
acetone	< 10	10	ug/l	8240	10/05/00 17:24	MT
carbon disulfide	< 5	5	ug/l	8240	10/05/00 17:24	MT
2-butanone(MEK)	< 10	10	ug/l	8240	10/05/00 17:24	MT
ethyl acetate	< 50	50	ug/l	8240	10/05/00 17:24	MT
methyl-2-pentanone(MIBK)	< 50	50	ug/l	8240	10/05/00 17:24	MT
2-hexanone	< 50	50	ug/l	8240	10/05/00 17:24	MT
Styrene	< 1	1	ug/l	8240	10/05/00 17:24	MT
o-chlorotoluene	< 1	1	ug/l	8240	10/05/00 17:24	MT

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 9/22/00

Work Order # 0009-11589

Approved by:

R.I. Analytical

Sample #: 020

MW-12S DUPLICATE GRAB 09/22/00 @0900

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
1,2-Dichlorobenzene	<1	1	ug/l	8240	10/05/00 17:24	MT
1,3-Dichlorobenzene	<1	1	ug/l	8240	10/05/00 17:24	MT
1,4-Dichlorobenzene	<1	1	ug/l	8240	10/05/00 17:24	MT
Surrogates		RANGE		8240	10/05/00 17:24	MT
Dibromofluoromethane	104		86-118%	8240	10/05/00 17:24	MT
4-Bromofluorobenzene	106		86-115%	8240	10/05/00 17:24	MT
Toluene-D8	89		88-110%	8240	10/05/00 17:24	MT

Volatile organic analyses performed under the operating guidelines  
method 8260.

**RI Analytical Laboratories, Inc.**  
**QA/QC Report**

**Client:** CIBA Specialty Chemicals Corp.  
**W.O. #:** 0009-11589  
**Date:** 10/10/2000

**-Method Blank Results-**

Parameter	Units	Results		Date Analyzed
Benzene	ug/l	<1		10/5/2000
Chlorobenzene	ug/l	<1		10/5/2000
1,1-Dichloroethene	ug/l	<1		10/5/2000
Toluene	ug/l	<1		10/5/2000
Trichloroethylene	ug/l	<1		10/5/2000

**Matrix Spike**

Parameter	Units	Sample #	Sample Conc.	Spike Conc.	Detected Conc.	% Rec.	Date Analyzed
Benzene	ug/l	11589-21	<1	8.0	7.65	96	10/5/2000
Chlorobenzene	ug/l	11589-21	<1	8.0	8.7	109	10/5/2000
1,1-Dichloroethene	ug/l	11589-21	<1	8.0	10.5	131	10/5/2000
Toluene	ug/l	11589-21	<1	8.0	7.26	91	10/5/2000
Trichloroethylene	ug/l	11589-21	<1	8.0	6.0	75	10/5/2000

**Matrix Spike Duplicate**

Parameter	Units	Sample #	Sample Conc.	Spike Conc.	Detected Conc.	% Rec.	Date Analyzed
Benzene	ug/l	11589-22	<1	8.0	7.5	94	10/5/2000
Chlorobenzene	ug/l	11589-22	<1	8.0	8.5	106	10/5/2000
1,1-Dichloroethene	ug/l	11589-22	<1	8.0	10.2	128	10/5/2000
Toluene	ug/l	11589-22	<1	8.0	7.63	95	10/5/2000
Trichloroethylene	ug/l	11589-22	<1	8.0	10.0	125	10/5/2000

9/21/00

P-36 S ✓

PW-HO (pump house) ⑩

2"

Depth to Bottom = 17.9'

Depth to H<sub>2</sub>O = 9.9'

Height of Column = 8.0

Amount of Purge = 4.0

	Volume 1	Volume 2	Volume 3
Purge Start =	1150		
pH =	7.19	7.24	7.26
Specific Conductance =	625	617	615
Temp	69.3°F	68.5	68.2
"817"	D.D.	0.0 mg/L	
Purge End	1205		
Time of Sample	1210		

\* BeC's nest in well Casing sprayed  
beer + wasp killer into Casing so we could  
sample per Walter Allen.

9-21-00

PP/5B

MW -001S / 4" well

Depth to bottom = 18.9

Depth to H<sub>2</sub>O = 9.2

Height of Column = 9.7

Amount to purge = 19.4 gallons

	Vol 1	Vol 2	Vol 3
Purge start	1240		
pH	6.80	6.66	6.54
COND	437	429	425
TEMP	68.2	65.4	65.3
202	D.O. 13° <sup>o</sup>	0.3 mg/L 13° <sup>o</sup>	
Purge End			
Time of Sample		13° <sup>o</sup>	5

9-21-00

PP/JB

P-375 ✓ 2" well

Depth to Bottom 16.9

Depth to H<sub>2</sub>O 10.3

Height of Column 6.6

Amount to Purge ~~10~~ 3.3

	VOL 1	VOL 2	VOL 3
start time	2:00 pm		
pH	6.99	7.04	7.00
second	554	512	492
Temp	76.5	72.1	70.3
"AX"			
DO.	1.0 mg/L		
PURGE END	1420		
SAMPETIME	1425		

9-21-00

PP/EB

SU - 110 ✓ 2" x 11

Depth to Bottom 34.7

Depth to H<sub>2</sub>O 10.0

Height of Column 24.7

Amount to Purge 12.4

	Vol 1	Vol 2	Vol 3	Vol 4
start time	14:30			
pH	8.28	7.60	7.21	7.13
SCOND	374	350	329	324
TEMP	73.1	69.4	66.7	65.7
"16B"	DO	1.7 mg/L		
PURGE END	15:00			
SAMPLE TIME	15:05			

9/21/00

MW-25' 4"

Depth to bottom = 17.6 18.9

Depth to H<sub>2</sub>O = 2.6 8.9

Height of column = 10.00

Amount to Purge = 19.6

	Well vol. 1	vol. 2	Vol. 3
Purge Start	0900		
pH	6.35	6.47	6.64
Specific Cond <sup>mS/cm</sup>	664	773	650
Temp	70.4°F	69.8	67.6
"BB"	DD. mg/l	0.3 mg/L	
Purge End	0925		
Time of Sample	0930		

Equipment Blank Taken @ 0900

9/21/00

## PW - 120 (pump house)

-2

Depth to Bottom = N/A

Depth to H<sub>2</sub>O = N/A

Height of Column = N/A

Amount to purge = N/A

	Volume 1	Volume 2	Volume 3
Purge Start *	0940		
pH	6.77	6.71	6.72
Specific Cond.	343	341	340
Temp	63.6 °F	62.8	62.5
"AY"	D.D. ⑪ 1.7 mg/L		
Purge End	0940 0950		
Time of Sample	0955		

\* 10 Gallon Purge

9/21/00

2" well

P - 355 ✓

Depth to Bottom = 17.3'

Depth to H<sub>2</sub>O = 96

Height of Column = 7.7

Amount to Purge = ~~15.0~~ 3.7

	Volume 1	Volume 2	Volume 3
Purge Start	1000		
pH	6.91	6.93	6.92
Specific Conductance	536	527	501
Temp	69.6 °F	68.1	67.9
"96"	DO: 0.2 mg/L		
Purge End	1030		
Time of Sample	1035		

9/21/00

2"

SW-120 ✓

Depth to bottom = 26.5

Depth to H<sub>2</sub>O = 9.6

Height of Column = 16.9

Amount to Purge = 8.4

	Volume 1	Volume 2	Volume 3
Purge Start	1040		
pH	7.74	7.15	7.00
Specific Cond.	351	233	230
Temp	70.0°F	68.5	66.5
"285"	D.O. 0.7 mg/L		
Purge End	1100		
Time of Sample	1105		

9/20/00

PW - 130 (pump house)

Depth to Bottom = N/A

Depth to H<sub>2</sub>O = N/A

Height of Column = N/A

Amount to Purge = N/A

	Volume 1	Volume 2	Volume 3
Purge Start*	1110		
pH	6.80	6.80	6.81
Specific Cond.	296	286	285
Temp	66.2 °F	64.7	63.5
"BA"	D.O.	0.9 mg/L	
Purge End	1115		
Time of Sample	1120		

\* 10 Gallons purged

9/21/00

SW-130

2"

Depth to Bottom = 35.3'

Depth to H<sub>2</sub>O = 10.3'

Height of Column = 24.5'

Amount to Purge = 12.1

		Volume 1	Volume 2	Volume 3
Purge Start		112.5		
	11	7.76	6.97	7.9 6.96
Specific Cond.		217	229	227
Temp		69.3°F	66.6	65.9
"140"	D.O.	2.1 mg/L		
Purge End		1135		
Time of Sample		1140		

9/21/00

⑧  
P-365 PW-110 (pump House) 21 ⑨

Depth to Bottom =

Depth to H<sub>2</sub>O =

Height of Column =

Amount to Purge = 10 gallons

	Volume 1	Volume 2	Volume 3
Purge Start	1215		
pH	6.96	6.76	6.71
Specific Cond.	264	258	257
Temp	64.5°F	62.8	61.7
"115"	D.O.	1.1 mg/l	
Purge End	1225		
Time of Sample	1230		

- 10 gallon Purge -

9/21/00

P-385 ✓

2"

Depth to Bottom = 18.3

Depth to H<sub>2</sub>O = 8.5

Height of Column = 98

Amount to Purge = 4.9

	Vol 1	Vol 2	Vol 3
Purge Start	1510		
pH	6.59	6.50	6.49
Specific Cond.	295	275	275
Temp	74.2	70.2	68.2
"BN"	D.O.	2.6 mg/l	
Purge End	1530		
Time of Sample	1535		

9-22-00

PP/JB

MW-125 ✓ 4"

Depth to Bottom = 22.0

Depth to H<sub>2</sub>O = 12.0

Height of Column = 10.00

Amount to Purge = 19.5

Purgestart	vol1	vol2	vol3
pH	6.65	6.75	6.85
SCOND	292	287	285
Temp	64.1	64.2	63.9
"BD"	Do mg/l	1.1	
PurgeEnd			
Time of Sample			

\*\* Oily Sheen on Surface of H<sub>2</sub>O

\* Duplicate

\* Matrix spike

\* Matrix spike Duplicate

9-22-00

PP/SB

MW - 004 S ✓

Depth to Bottom = 21.4

Depth to H<sub>2</sub>O = 12.1

Height of Column = 9.3

Amount to Purge = 18.6

	Vol 1	Vol 2	Vol 3
Purge start			
pH	6.33	6.31	6.40
Scour	382	420	426
Temp	63.1	64.1	65.2
"AT" DO mg/l	2.0		
Purge END			
Sample Time			

9-22-00

PP/SB

MW = 215 ✓

Depth to Bottom = 17.7

Depth to H<sub>2</sub>O = 5.5

Height of Column = 12.2

Amount to Purge = 24.0

	VO1 1	VO1 2	VO1 3
Purge start			
pH	6.51	6.43	6.46
second	221	300	298
Temp	65.1	68.3	66.2
"BT"	DO mg/l	1.9	
PURGE END			
SAMPLE TIME			

**R.I. Analytical Laboratories, Inc.**

41 Illinois Avenue  
Warwick, RI 02888  
Phone: (401) 737-8500  
Fax: (401) 738-1970

950 Boylston Street, Unit 102  
Newton Highlands, MA 02461  
Phone: (617) 965-5133  
Fax: (617) 965-5624

**CHAIN OF CUSTODY RECORD**

Page 1 of 2

Container Type Codes:		Preservative Codes:		Matrix Codes:	
P=Plastic	AG=Amber Glass	NP=Non preserved	S=Sulfuric	GW=Groundwater	S=Soil
G=Glass	St=Sterile	I=Cooled 4°C	H=HCL	WW=Wastewater	SI=Sludge
V=Vial	N=Nitric	SH=NaOH	DW=Drinking water	A=Air	O=Other (describe)
O=Other (describe)	M=Methanol	SB=NaHSO4	SB=NaHSO4	B=Bulk/Solid	

Date Collected	Time Collected	Sample ID	G=Grab C=Comp.	Containers # + (code)	Preservative (code)	Matrix (code)	Analysis Request			
9/21/00	0930	MW-025	G	2-V	H	GW	8040 including o-chlorotoluene/pH/Temp/S.C./DO			
9/21/00	1105	SW-120	G	2-V	H	GW				
9/21/00	1035	P-355	G	2-V	H	GW				
9/21/00	1210	P-365	G	2-V	H	GW				
9/21/00	1305	MW-015	G	2-V	H	GW				
9/21/00	1140	SW-150	G	2-V	H	GW				
9/21/00	1425	P-375	G	2-V	H	GW				
9/21/00	1505	SW-110	G	2-V	H	GW				
9/21/00	1535	P-385	G	2-V	H	GW				
9/22/00	0900	MW-125	G	2-V	H	GW				

**Client Information**

Company Name:	Ciba Geigy			Project Name / Location:	Ciba Geigy Site on Mill St., Cranston, RI		
Address:				P.O. Number / Project Number:			
City / State / Zip:				Project Manager / Report To:			
Phone:	(903)-914-2737	Fax:	(903)-914-2909	Sampled by:	Justin Blair / Paul Perotti		
Contact:	Barry Cohen			Reference Proposal:			

Relinquished by:	Date	Time	Received by:	Date	Time
<i>Justin Blair</i>	9/22/00	1230	<i>M. J. Blair</i>	9/22/00	100

Turn Around Time:
<input checked="" type="checkbox"/> Normal
<input type="checkbox"/> 5 business days Surcharges may apply
<input type="checkbox"/> Rush _____ (business days)

## Project Comments:

\* pH, Temp, S.C., DO  
Taken in field.  
Field notes and results  
attached

RIAL USE ONLY:
<input type="checkbox"/> Pick-Up Only
<input checked="" type="checkbox"/> RIAL Sampled
<input checked="" type="checkbox"/> Shipped on Ice RIAL W.O. # 11589



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**CHAIN OF CUSTODY RECORD**

Page 2 of 3

**Container Type Codes:**  
P=Plastic V=Vial  
G=Glass St=Sterile  
AG=Amber Glass  
O=Other (describe)

**Preservative Codes:**  
NP=Non preserved S=Sulfuric  
I=Cooled 4°C H=HCL  
N=Nitric SH=NaOH  
M=Methanol SB=NAHSO4

**Matrix Codes:**  
GW=Groundwater S=Soil  
WW=Wastewater SI=Sludge  
DW=Drinking Water A=Air  
O=Other (describe) B=Bulk/Solid

Date Collected	Time Collected	Sample ID	G=Grab C=Comp.	Containers # + (code)	Preservative (code)	Matrix (code)	Analysis Request
9/27/00	0900	MW-125 Duplicate	G	2-V	H	GW	SD40 including O-chlorotoluene
9/27/00	0900	MW-125 Matrix Spike	G	2-V	H	GW	
9/27/00	0900	MW-125 Matrix Spike Dip.	G	2-V	H	GW	
9/27/00	1000	MW-215	G	2-V	H	GW	SD40 including O-chlorotoluene, pH*, Temp*, SC*, DO*
9/27/00	0930	MW-045	G	2-V	H	GW	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
9/27/00	0800	Trip Blank	G	1-V	H	GW	SD40 including O-chlorotoluene
9/27/00	0900	Equipment Blank	G	1-V	H	GW	
9/27/00	0900	Trip Blank	G	1-V	H	GW	
9/27/00	0900	Equipment Blank	G	1-V	H	GW	↓ ↓
9/27/00	1230	PW-110	G	2-V	H	GW	SD40 including O-chlorotoluene, pH*, Temp*, SC*, DO*

**Client Information**

Company Name:	Ciba Geigy		Project Name / Location:	Ciba Geigy site on Mill St., Cranston, RI		
Address:			P.O. Number:	Project Number:		
City / State / Zip:			Report To:	Phone:	Fax:	
Phone:	(903)-914-7737	Fax:	903-914-2909	Sampled by:	Justin Blair / Paul Perrotti	
Contact:	Barry Cohen		Reference Proposal:			

Relinquished by:	Date	Time	Received by:	Date	Time
Justin Blair	9/26/00	1230	Mr. Blair	9/27/00	1:00

**Turn Around Time:**

- Normal
- 5 business days  
Surcharges may apply
- Rush \_\_\_\_\_ (business days)

**Project Comments:**

\* pH, Temp, SC, DO.  
Taken in field, Field  
Notes and Results attached

RIAL USE ONLY: <input checked="" type="checkbox"/> Pick-Up Only	11589
<input checked="" type="checkbox"/> RIAL Sampled	
<input checked="" type="checkbox"/> Shipped on Ice	
RIAL W.O. #	

**APPENDIX C**  
**TIME-SERIES**  
**FOR**  
**UPGRADIENT WELLS**

**Table 3**  
**UPGRADIENT WELLS**  
**Cumulative Results for Chemicals Of Concern**  
**(Units in ppb)**

Well No.	Date Sampled	1,2-Dichloro-benzene	Chloro-benzene	o-Chloro-toluene	Toluene	Xylenes
MPS		94	1700	1500	1700	76
MW-004S	6-Mar-96	89	210	1700	2100	300
MW-004S	1-May-96	88	130	1200	1500	160
MW-004S	9-Apr-97	43	44	160	88	100
MW-004S	8-Oct-97	72	41	660	370	480
MW-004S	28-Apr-98	40	220	1200	2700	130
MW-004S	15-Oct-98	100 U	580	300	100 U	100 U
MW-004S	16-Apr-99	50 U	50 U	50	50 U	730
MW-004S	27-Sep-99	31	93	400	20 U	79
MW-004S	20-Apr-00	74	20 U	20 U	84	20 U
MW-004S	22-Sep-00	30 U	30 U	30 U	30 U	30 U
MW-012S	5-Mar-96	4.3 U	2.4 J	2 U	2.8 U	75
MW-012S	2-May-96	4.3 U	1.5 J	2 U	2.8 U	42
MW-012S	10-Apr-97	1 U	1 U	1 U	1 U	1 U
MW-012S	8-Oct-97	1 U	1 U	1 U	1 U	12
MW-012S	28-Apr-98	1 U	1 U	1 U	1 U	65
MW-012S	15-Oct-98	10 U	10 U	10 U	10 U	87
MW-012S	16-Apr-99	10 U	12	10 U	10 U	24
MW-012S	27-Sep-99	58	1 U	1 U	1 U	6
MW-012S	20-Apr-00	1 U	1 U	1 U	1 U	1
MW-012S	22-Sep-00	1 U	1 U	1 U	1 U	1
MW-021S	6-Mar-96	43 U	30 U	480	12 J	34 U
MW-021S	1-May-96	22 U	5 J	820	15	17 U
MW-021S	10-Apr-97	1 U	1 U	120	1	6
MW-021S	27-Oct-97	30	49	24000	20000	1600
MW-021S	28-Apr-98	1 U	1 U	54	1 U	1 U
MW-021S	15-Oct-98	100 U	100 U	7900	2500	580
MW-021S	15-Apr-99	50 U	50 U	9000	50 U	520
MW-021S	27-Sep-99	40 U	40 U	8100	40 U	40 U
MW-021S	20-Apr-00	40 U	40 U	40 U	40 U	40 U
MW-021S	22-Sep-00	500 U	500 U	500 U	500 U	500 U

MPS = Media Protection Standard

U = Nondetect with detection limit given

J = Estimated value

1,2 Dichlorobenzene MPS=94 PPB

Chlorobenzene MPS=1700 PPB

o-chlorotoluene MPS=1500 ppb

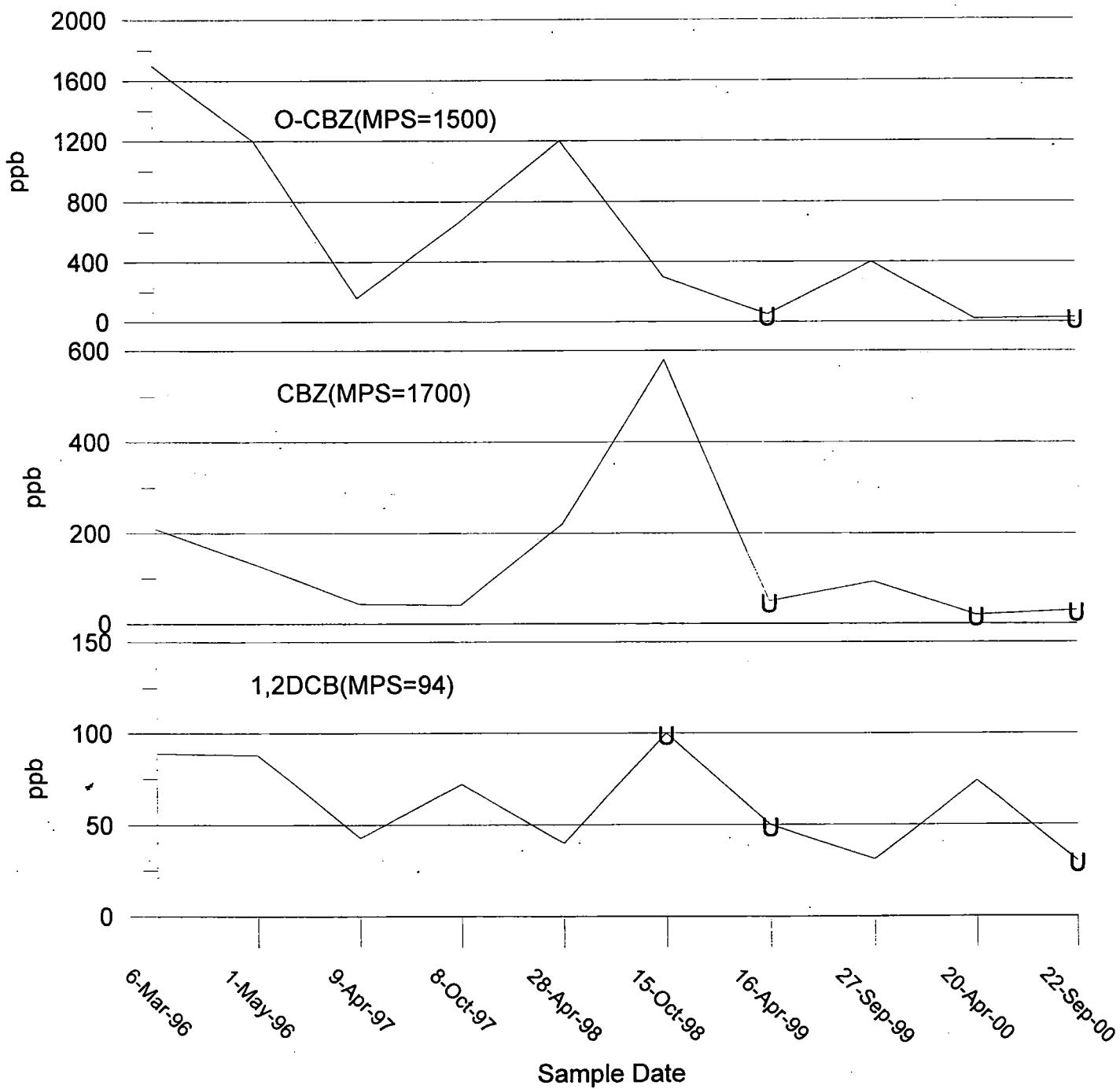
toluene MPS=1700 ppb

xylenes MPS=76 ppb

Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-004S  
Upgradient Well

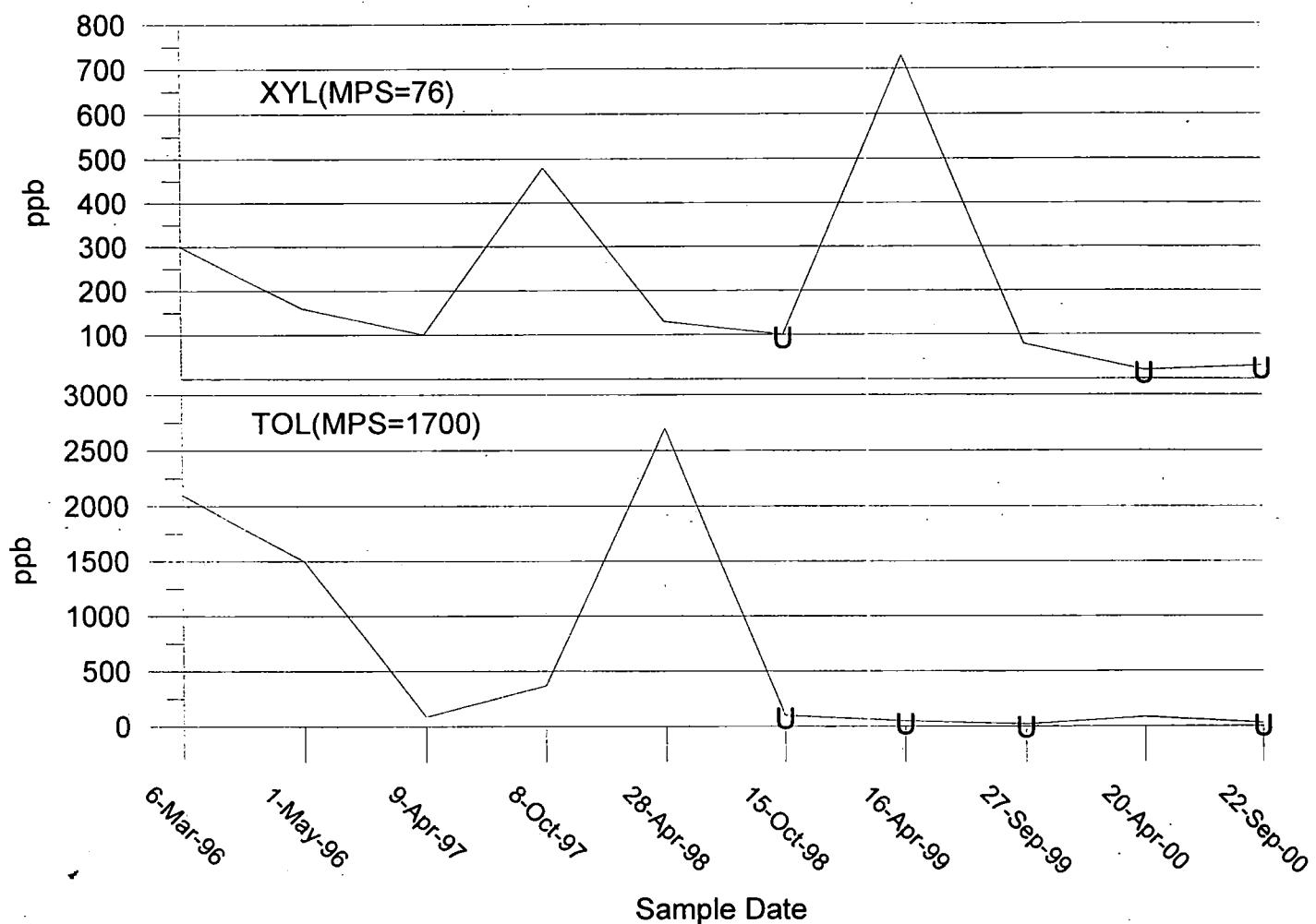
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-004S  
Upgradient Well

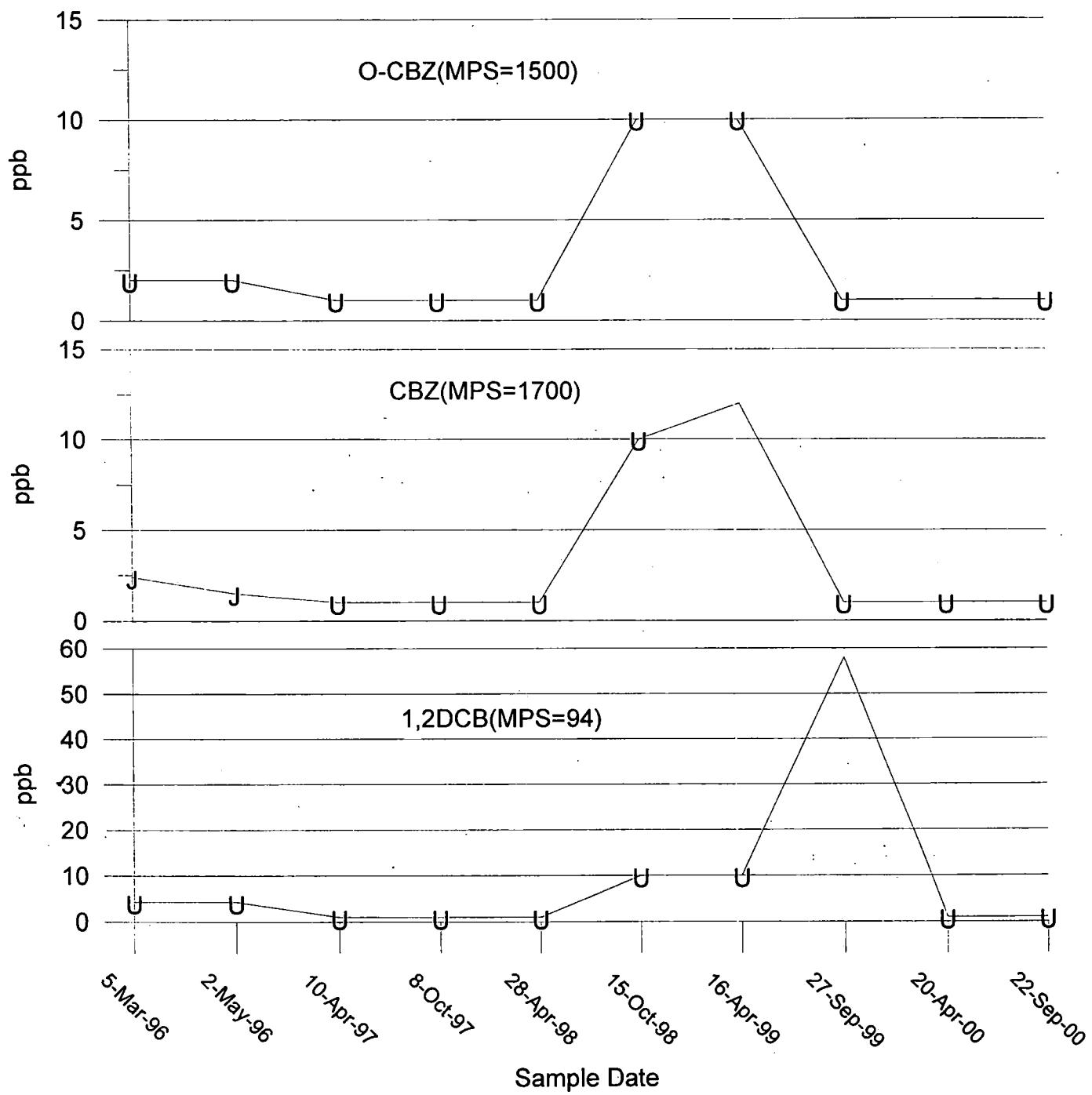
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-012S  
Upgradient Well

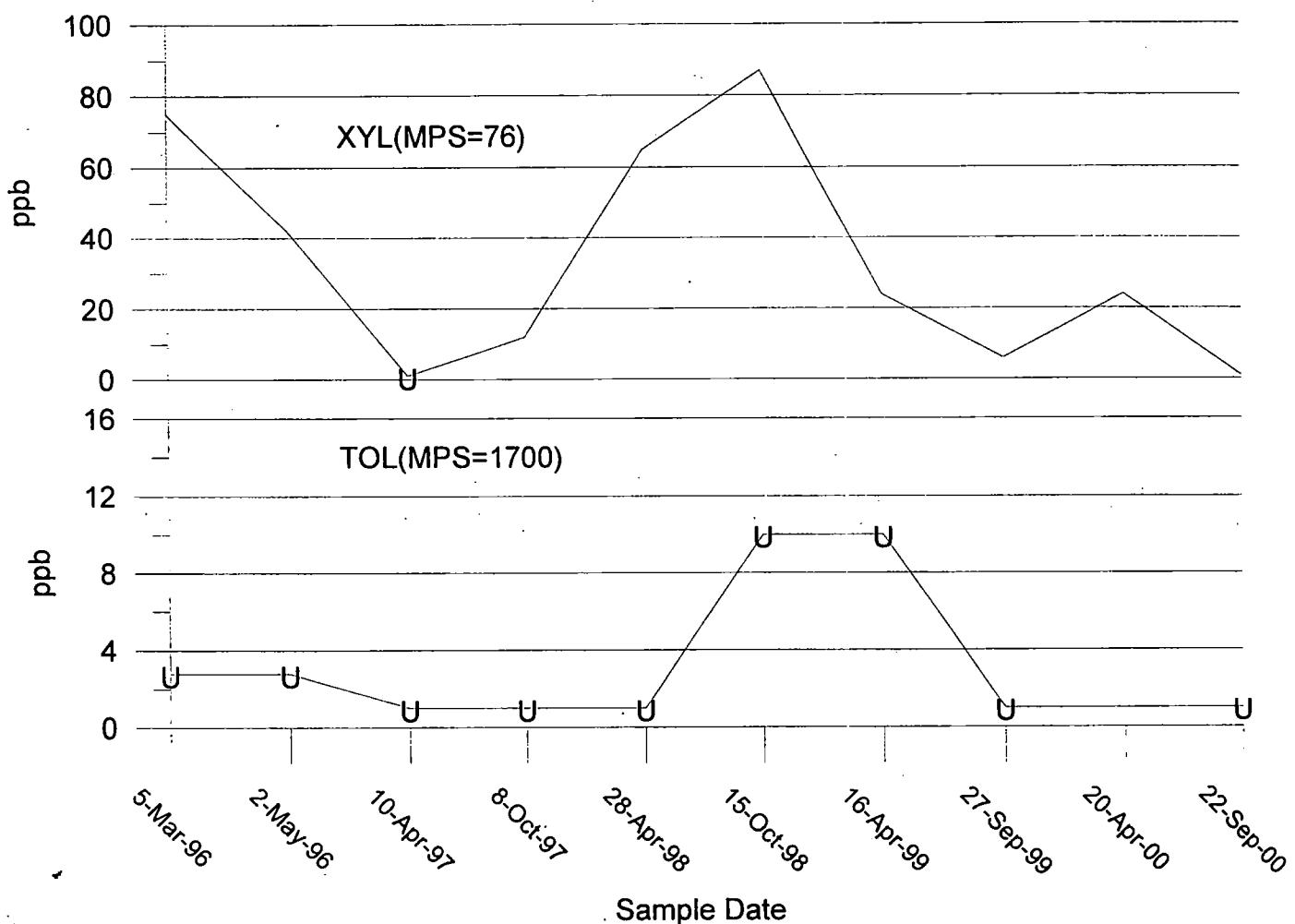
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-012S  
Upgradient Well

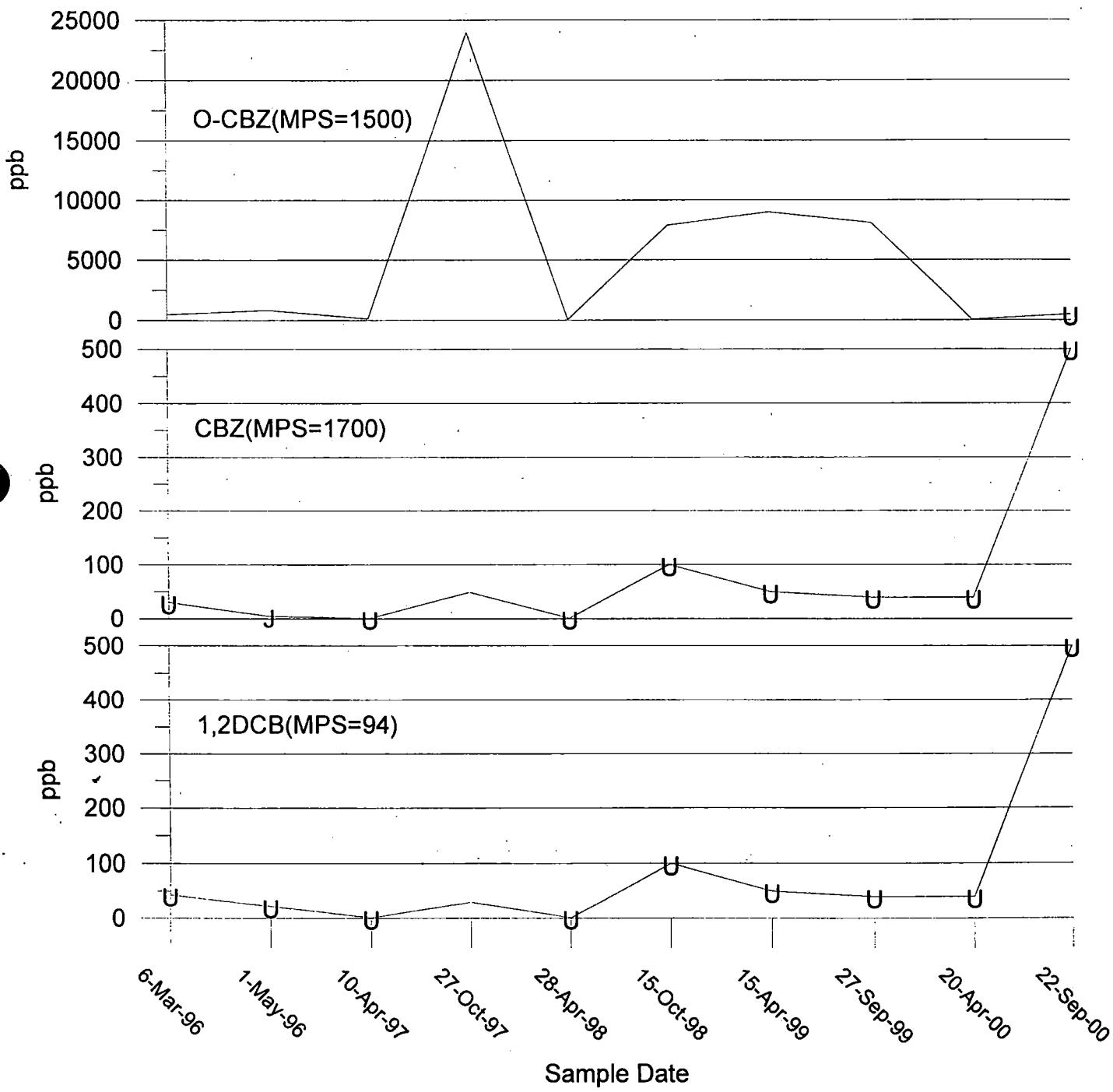
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-021S  
Upgradient Well

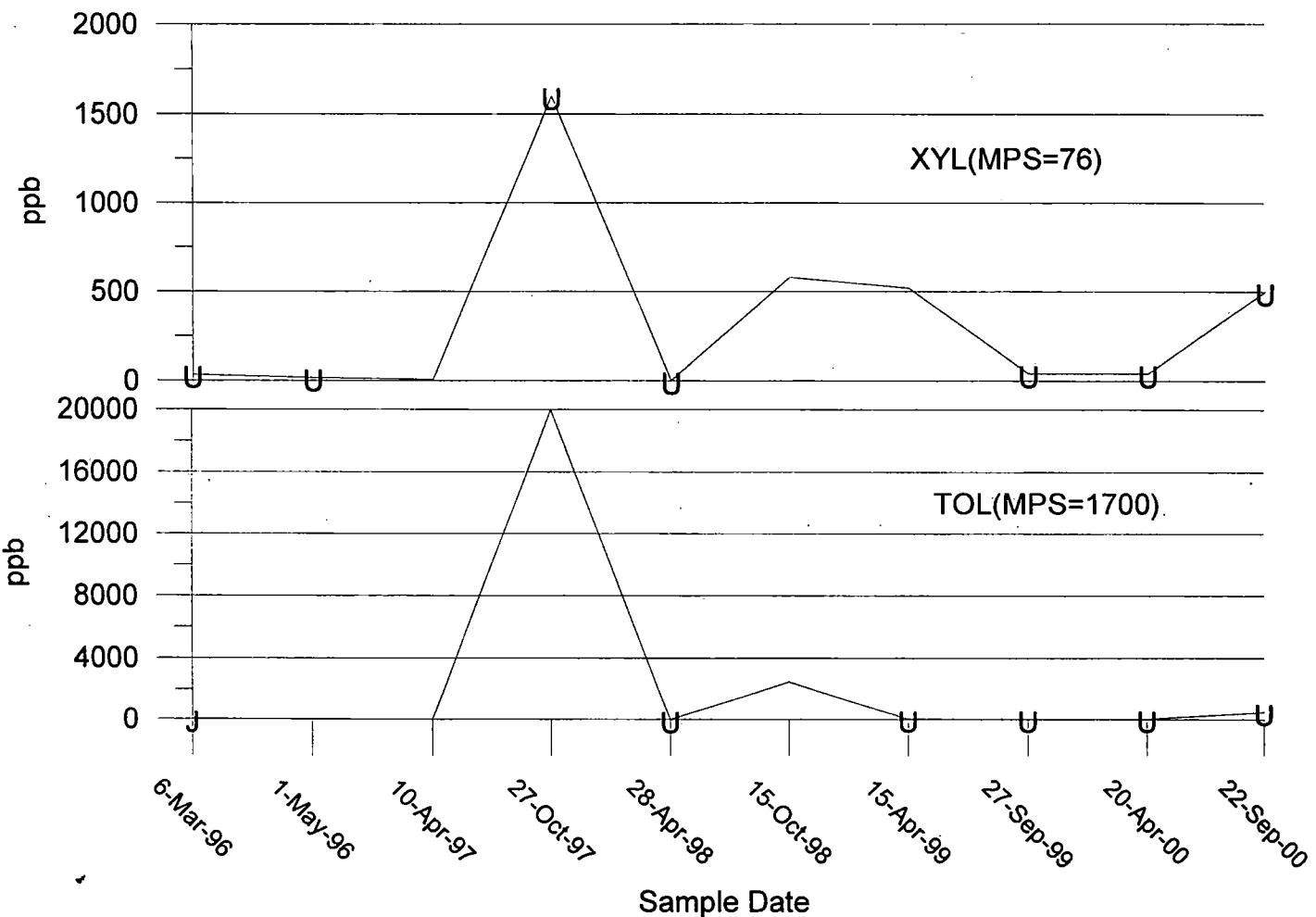
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-021S  
Upgradient Well

"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



**APPENDIX D**  
**TIME-SERIES GRAPHS**  
**FOR**  
**BULKHEAD WELLS**

**Table 4**  
**BULKHEAD WELLS**  
**Cumulative Results for Chemicals Of Concern**  
**(Units in ppb)**

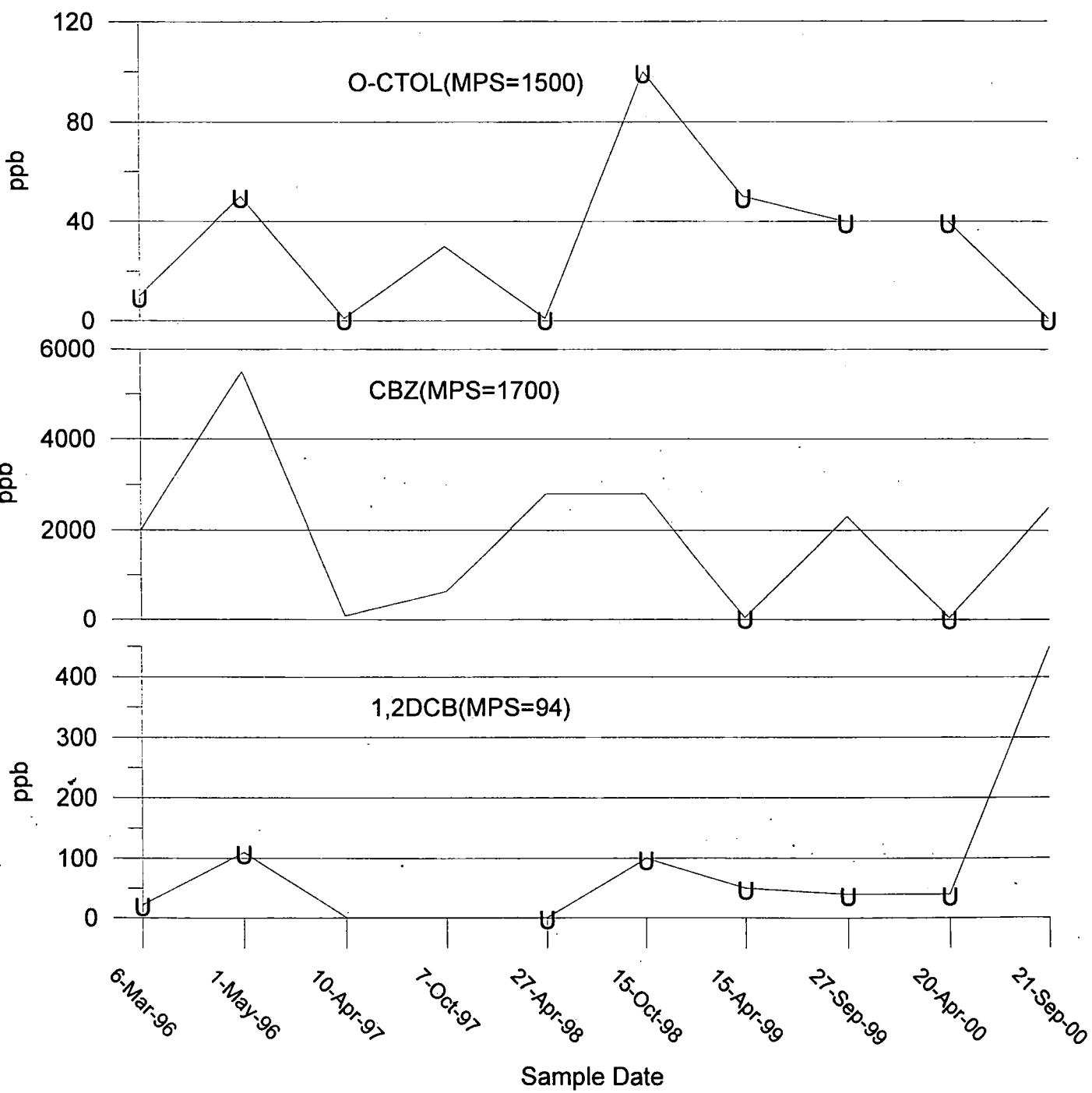
Well No.	Date Sampled	1,2-Dichloro-	Chloro-	o-Chloro-	Toluene	Xylenes
		benzene				
MPS		94	1700	1500	1700	76
MW-001S	6-Mar-96	22 U	2000	10 U	16	18
MW-001S	1-May-96	110 U	5500	50 U	30 J	85 U
MW-001S	10-Apr-97	1	93	1 U	9	7
MW-001S	7-Oct-97	1	640	30	23	2
MW-001S	27-Apr-98	1 U	2800	1 U	1	2
MW-001S	15-Oct-98	100 U	2800	100 U	100 U	
MW-001S	15-Apr-99	50 U	50	50 U	50 U	50 U
MW-001S	27-Sep-99	40 U	2300	40 U	40 U	40 U
MW-001S	20-Apr-00	40 U	40 U	40 U	40 U	40 U
MW-001S	21-Sep-00	450	2500	1 U	1 U	1 U
MW-002S	5-Mar-96	340	3200	50 U	200	85 U
MW-002S	30-Apr-96	44 J	2500	50 U	52 J	85 U
MW-002S	8-Apr-97	20	64	1 U	46	18
MW-002S	7-Oct-97	90	440	100	97	31
MW-002S	27-Apr-98	22	500	1 U	88	28
MW-002S	15-Oct-98	28	5200	1 U	92	34
MW-002S	15-Apr-99	140	2260	10 U	420	33
MW-002S	27-Sep-99	43	40 U	40 U	40 U	40 U
MW-002S	20-Apr-00	1340	12000	150	830	120
MW-002S	21-Sep-00	930	9400	500 U	500 U	500 U
P-035S	8-Apr-97	22	74	1 U	4	12
P-035S	7-Oct-97	240	710	2	10	12
P-035S	27-Apr-98	42	360	1 U	2	10
P-035S	15-Oct-98	140	2100	10 U	130	80
P-035S	15-Apr-99	20	480	10 U	10 U	10 U
P-035S	27-Sep-99	40 U	40 U	40 U	40 U	40 U
P-035S	20-Apr-00	4580	77000	300	160	56
P-035S	21-Sep-00	6600	500 U	500 U	500 U	500 U
P-036S	6-Mar-96	22 U	440	10 U	14 U	17 U
P-036S	1-May-96	22 U	460	30	14 U	17 U
P-036S	8-Apr-97	1 U	72	1 U	1 U	2
P-036S	7-Oct-97	1 U	35	9	2	1 U
P-036S	27-Apr-98	1 U	260	1 U	1 U	1 U
P-036S	15-Oct-98	1 U	230	1 U	1 U	1
P-036S	15-Apr-99	10 U	200	10 U	10 U	10 U
P-036S	27-Sep-99	10 U	450	10 U	10 U	10 U
P-036S	20-Apr-00	1 U	290	1 U	1 U	1 U
P-036S	21-Sep-00	30 U	300	30 U	30 U	30 U
P-037S	9-Apr-97	2 U	54	16	1 U	1
P-037S	8-Oct-97	2	50	13	1 U	1 U
P-037S	28-Apr-98	2	420	8	1 U	1 U
P-037S	15-Oct-98	30 U	540	30 U	30 U	30 U
P-037S	15-Apr-99	10 U	210	10 U	10 U	10 U
P-037S	27-Sep-99	10 U	660	10 U	10 U	10 U
P-037S	20-Apr-00	1 U	460	5	1 U	1 U
P-037S	21-Sep-00	30 U	370	30 U	30 U	30 U
P-038S	6-Mar-96	4.3 U	2.4 J	2 U	1.3 J	3.4 U
P-038S	1-May-96	4.3 U	1.2 J	2 U	2.8 U	3.4 U
P-038S	9-Apr-97	1 U	1 U	1 U	1 U	1 U
P-038S	8-Oct-97	1 U	1 U	1 U	1 U	1 U
P-038S	28-Apr-98	1 U	1 U	1 U	1 U	1 U
P-038S	15-Oct-98	1 U	2	1 U	1 U	1 U
P-038S	15-Apr-99	1 U	1 U	1 U	1 U	1 U
P-038S	27-Sep-99	1 U	1	1 U	1 U	1 U
P-038S	20-Apr-00	1 U	1 U	1 U	1 U	1 U
P-038S	21-Sep-00	1 U	1	1 U	1 U	1 U

MPS = Media Protection Standard  
U = Nondetected with detection limit given  
J = Estimated value  
1,2 Dichlorobenzene MPS=94 PPB  
Chlorobenzene MPS=1700 PPB  
o-chlorotoluene MPS=1500 ppb  
toluene MPS=1700 ppb  
xylenes MPS=76 ppb

Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-001S  
Along Bulkhead

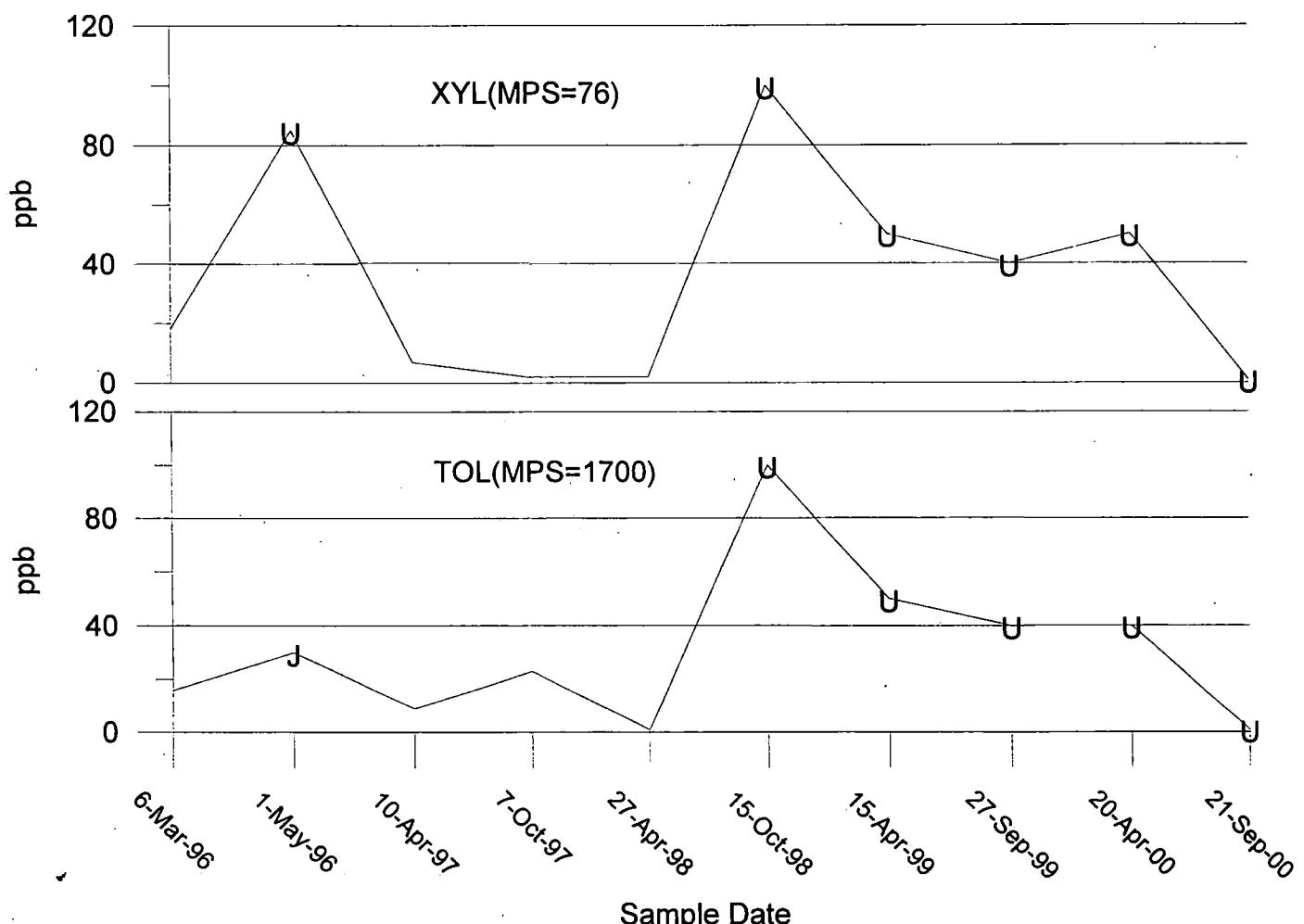
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-001S  
Along Bulkhead

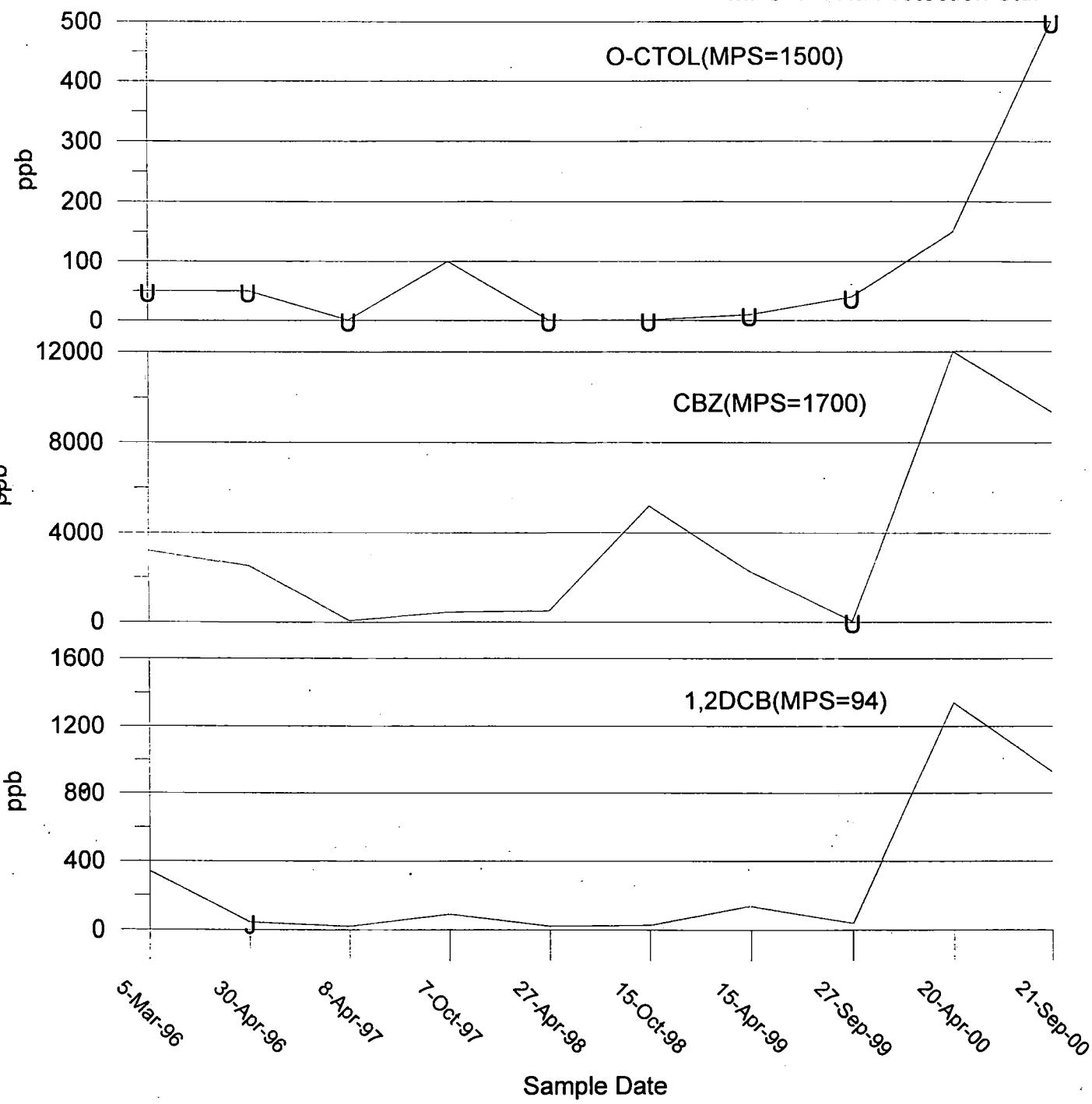
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-002S  
Along Bulkhead

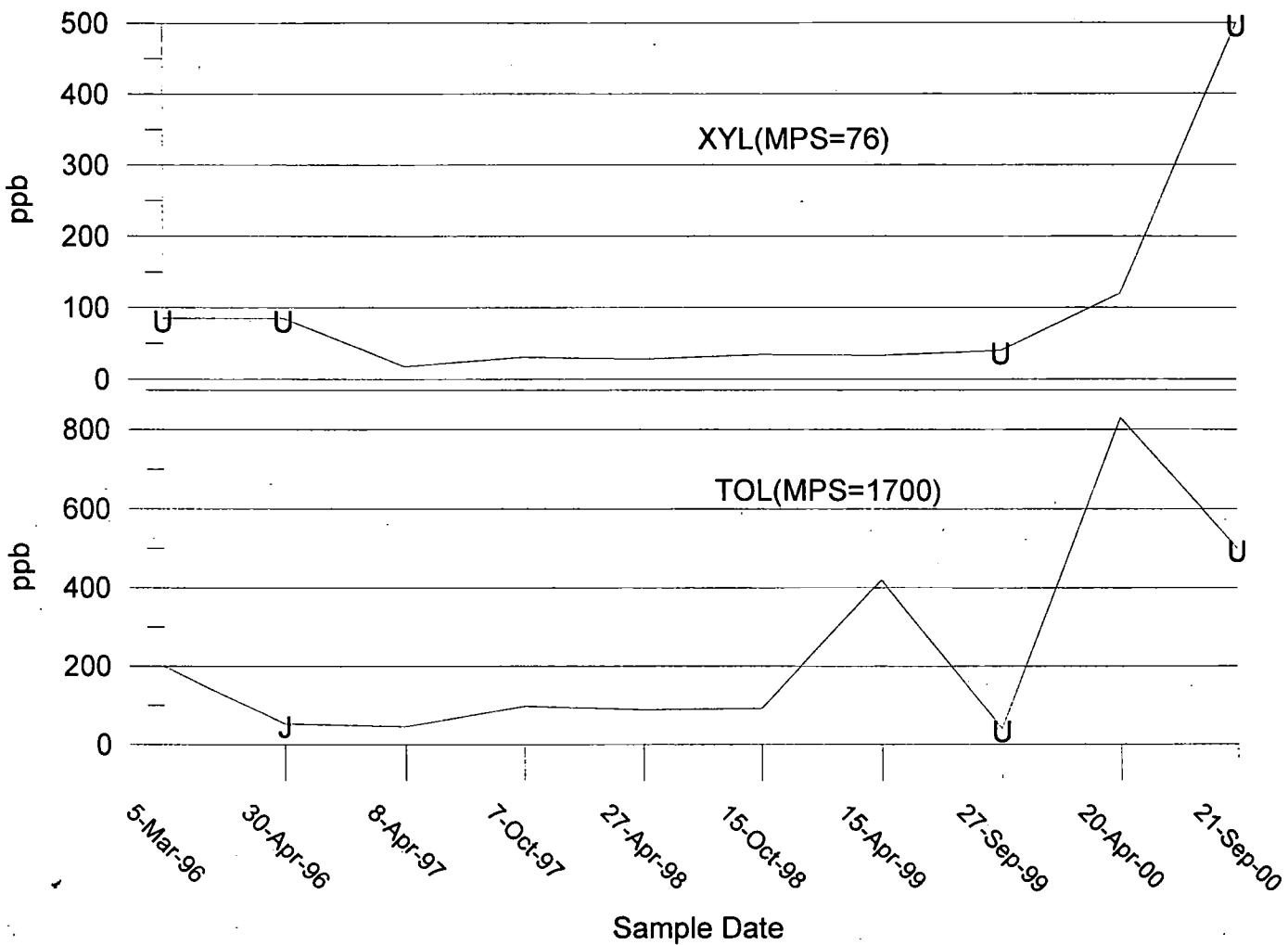
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-002S  
Along Bulkhead

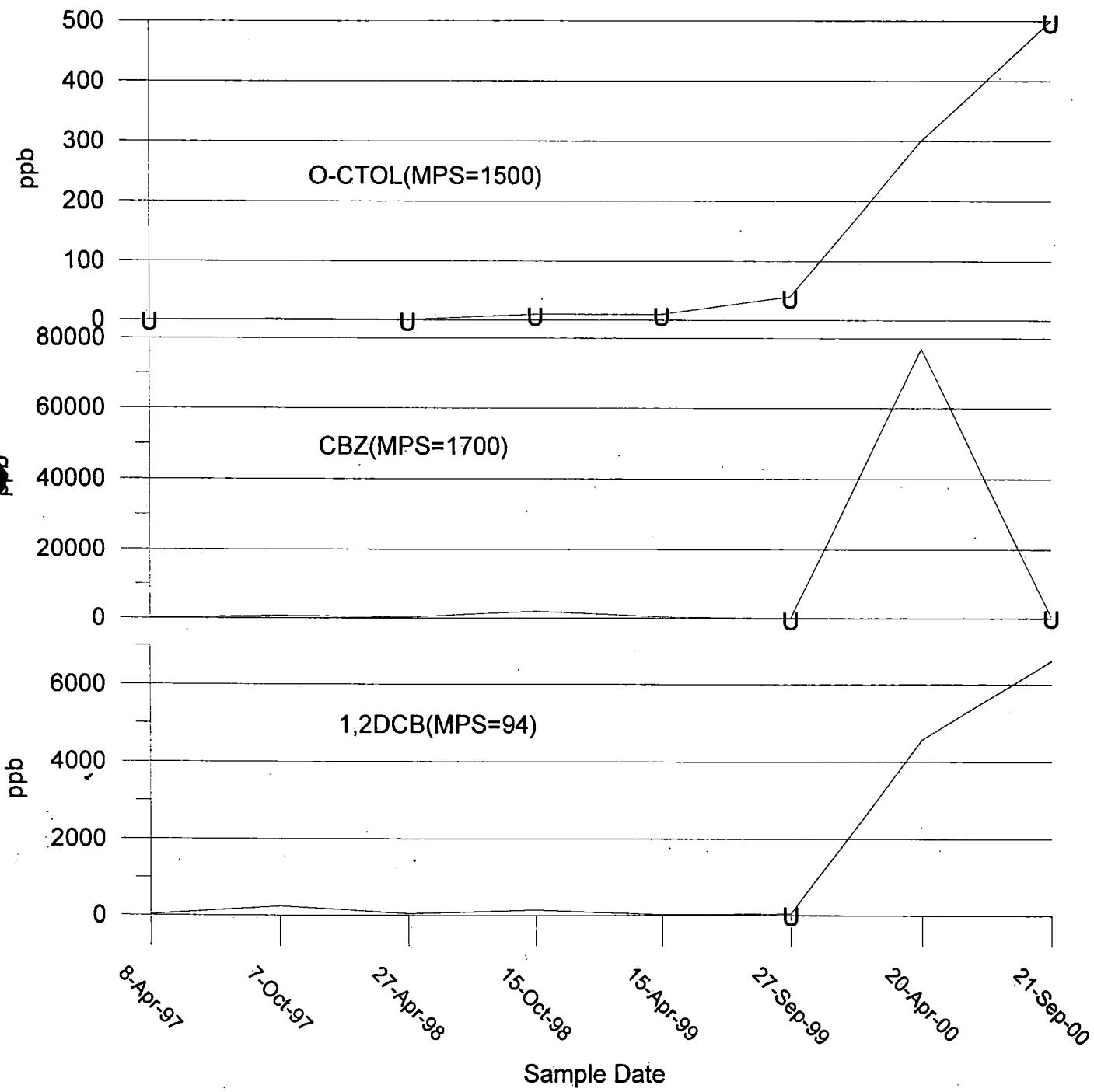
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-035S  
Along Bulkhead

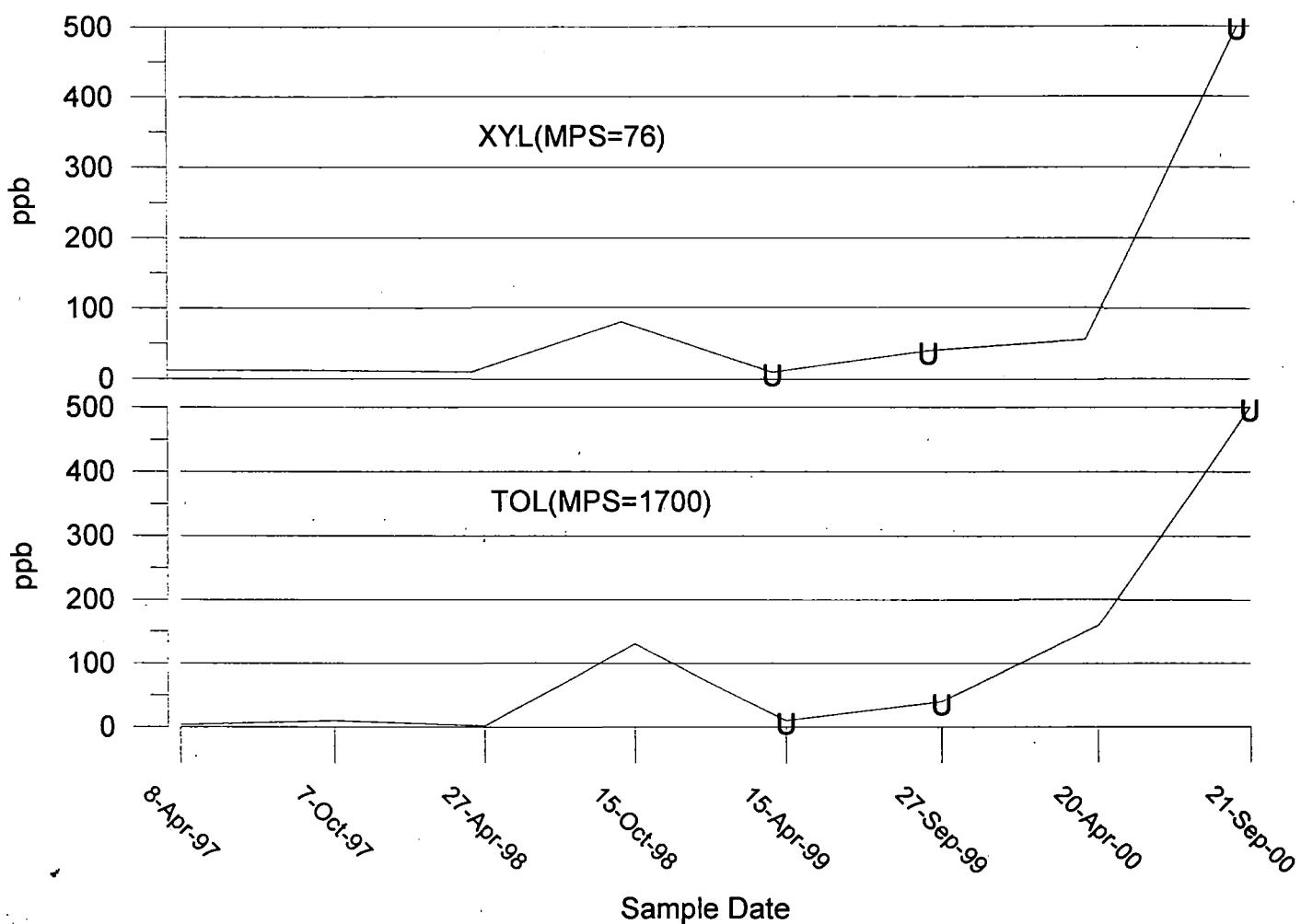
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-035S  
Along Bulkhead

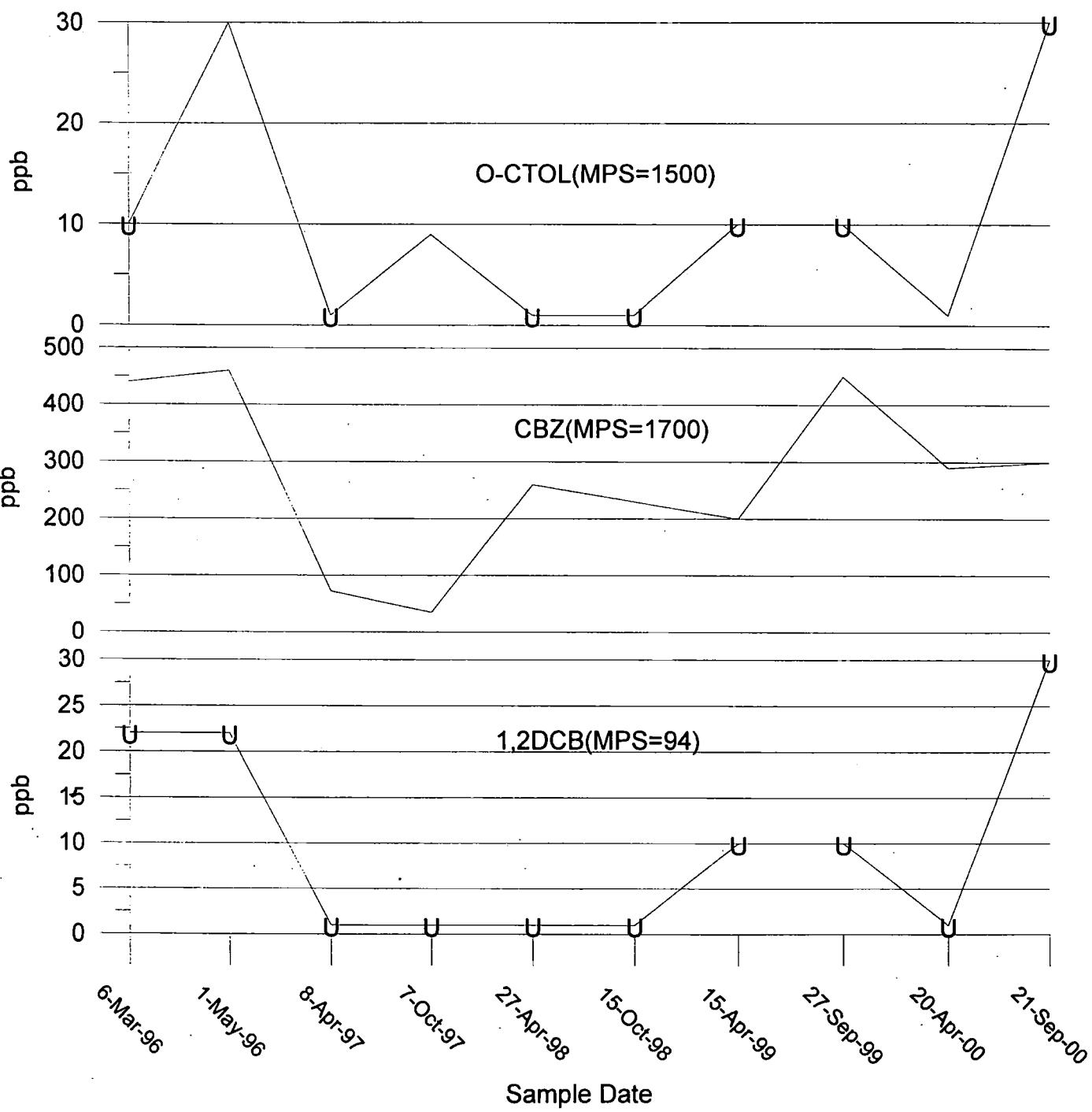
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-036S  
Along Bulkhead

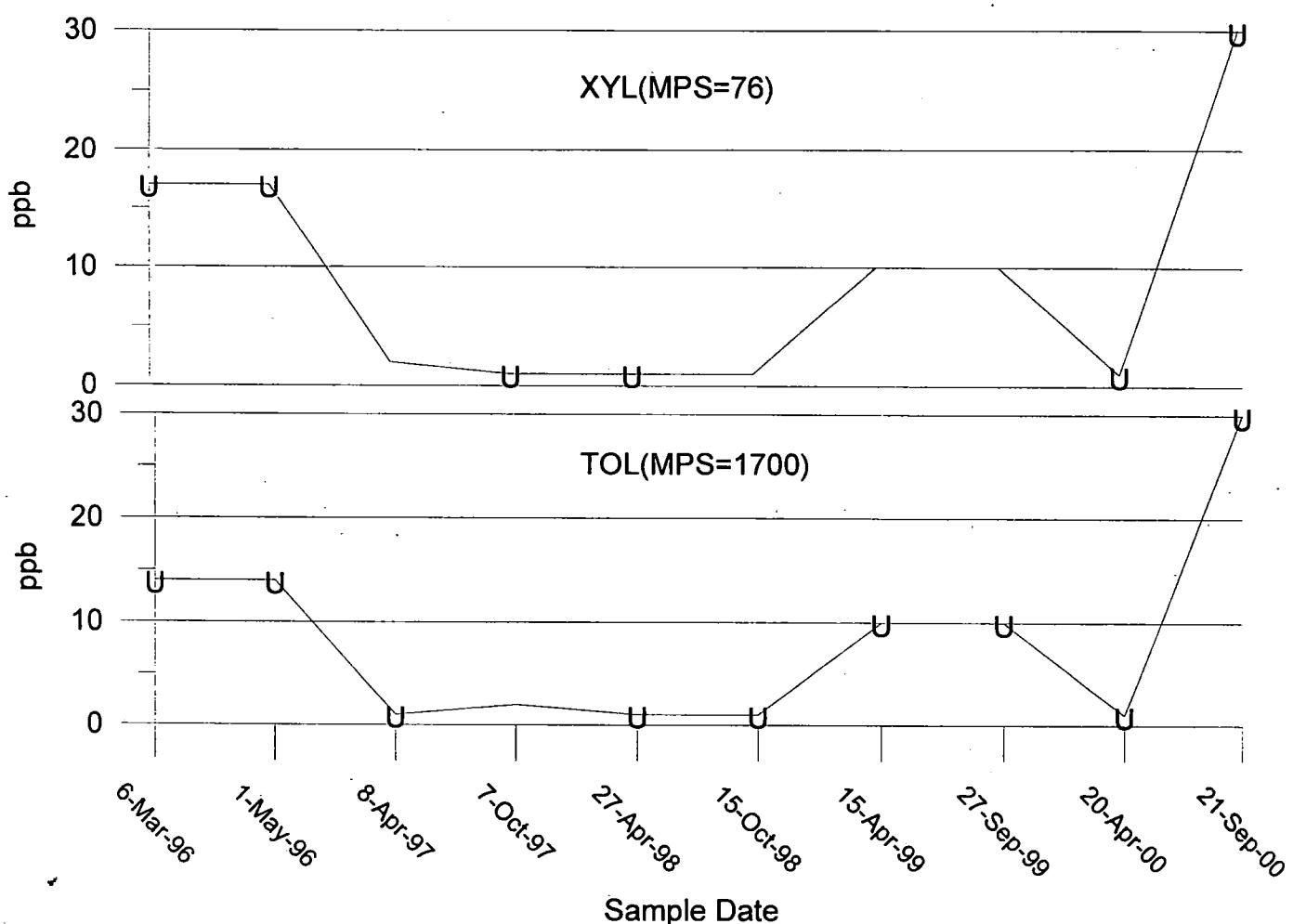
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-036S  
Along Bulkhead

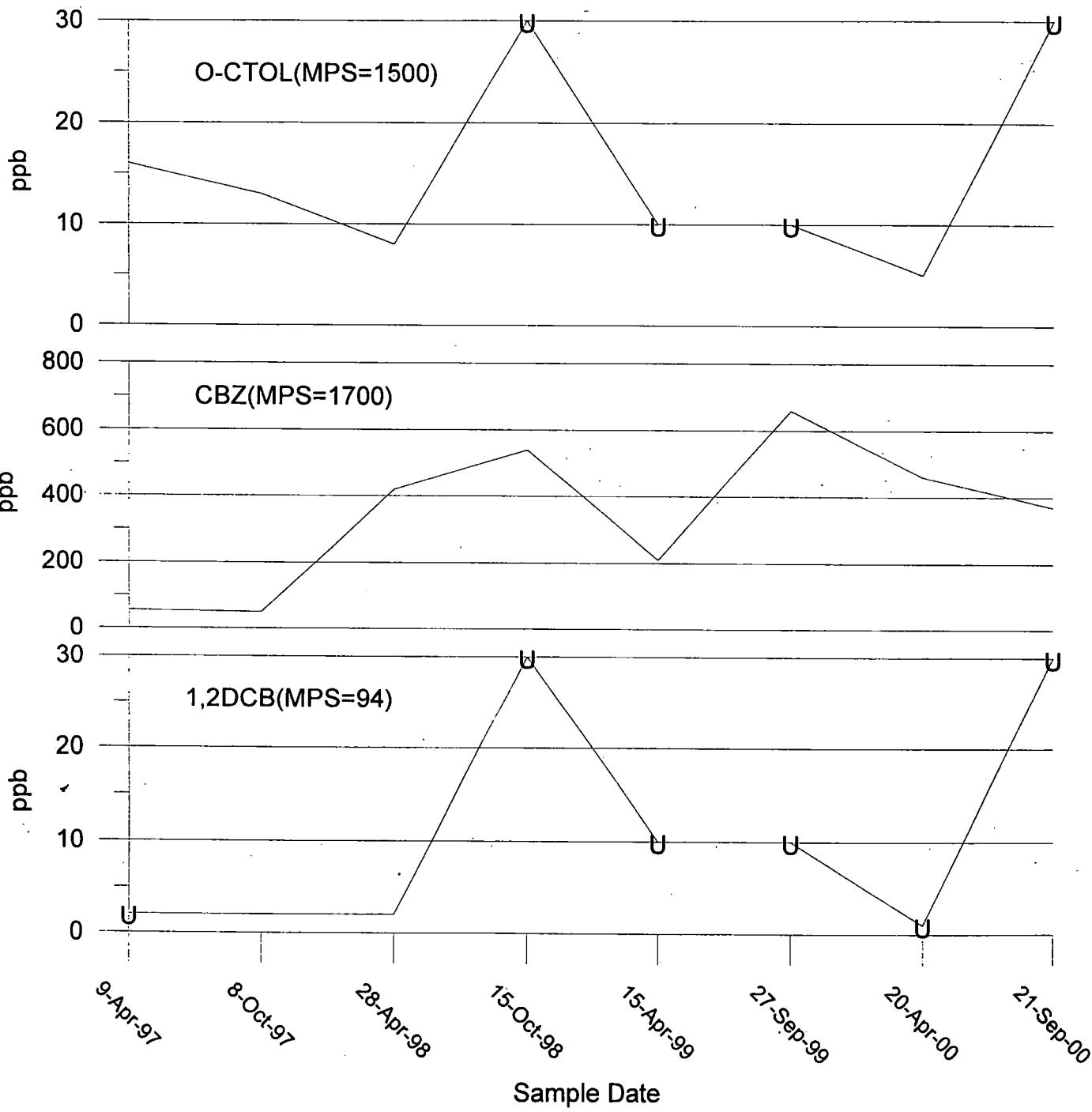
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-037S  
Along Bulkhead

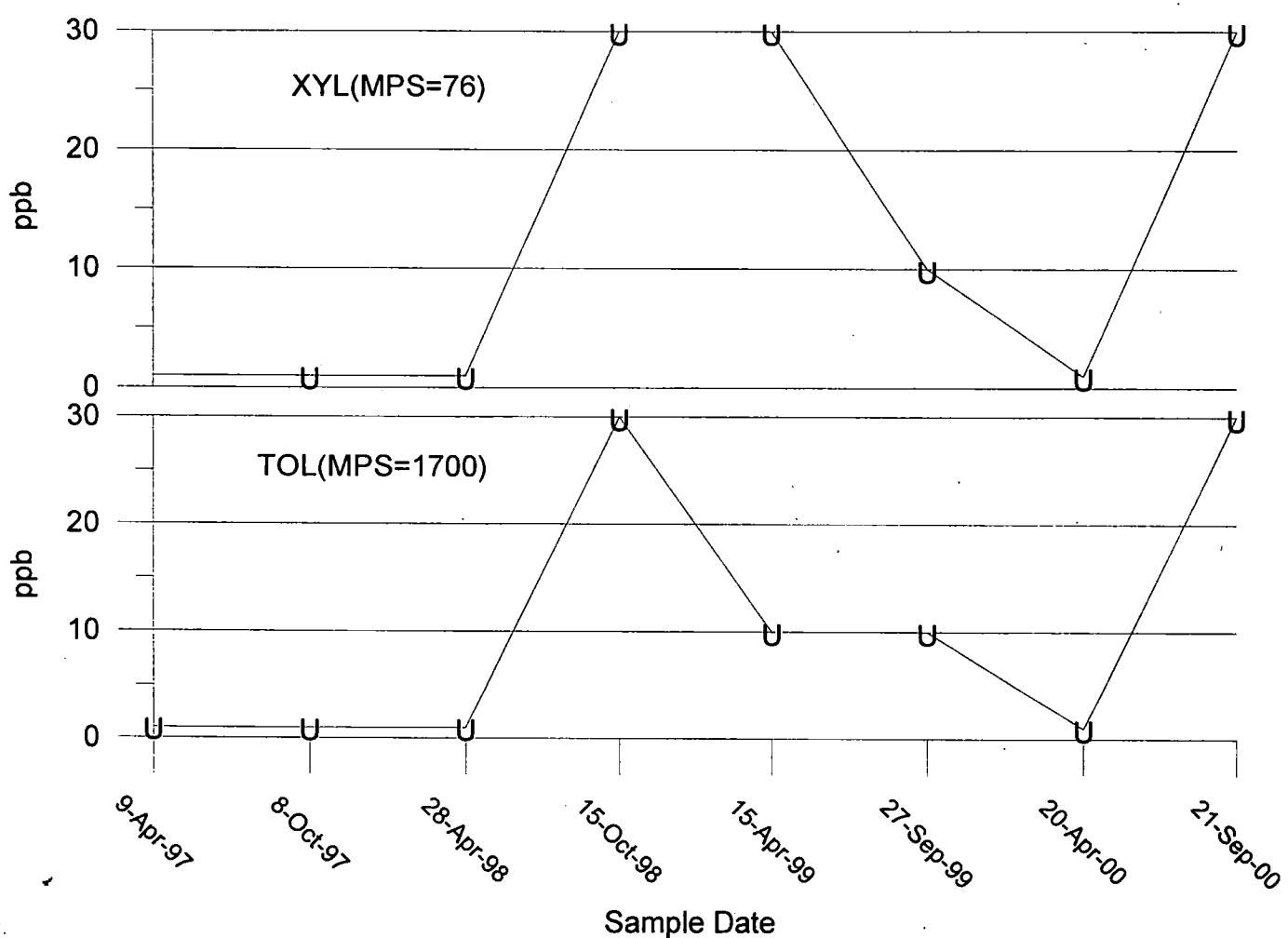
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-037S  
Along Bulkhead

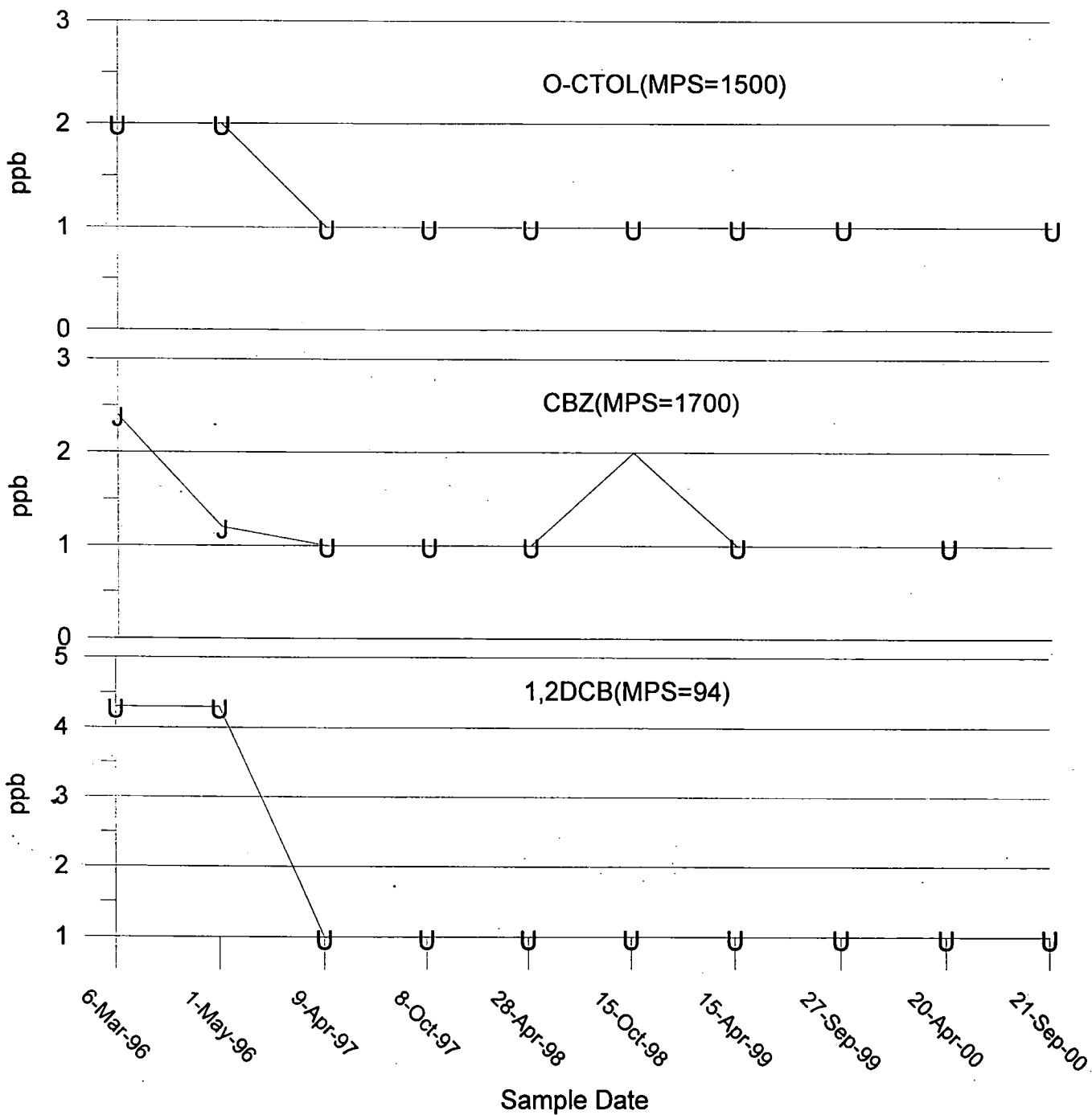
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-038S  
Along Bulkhead

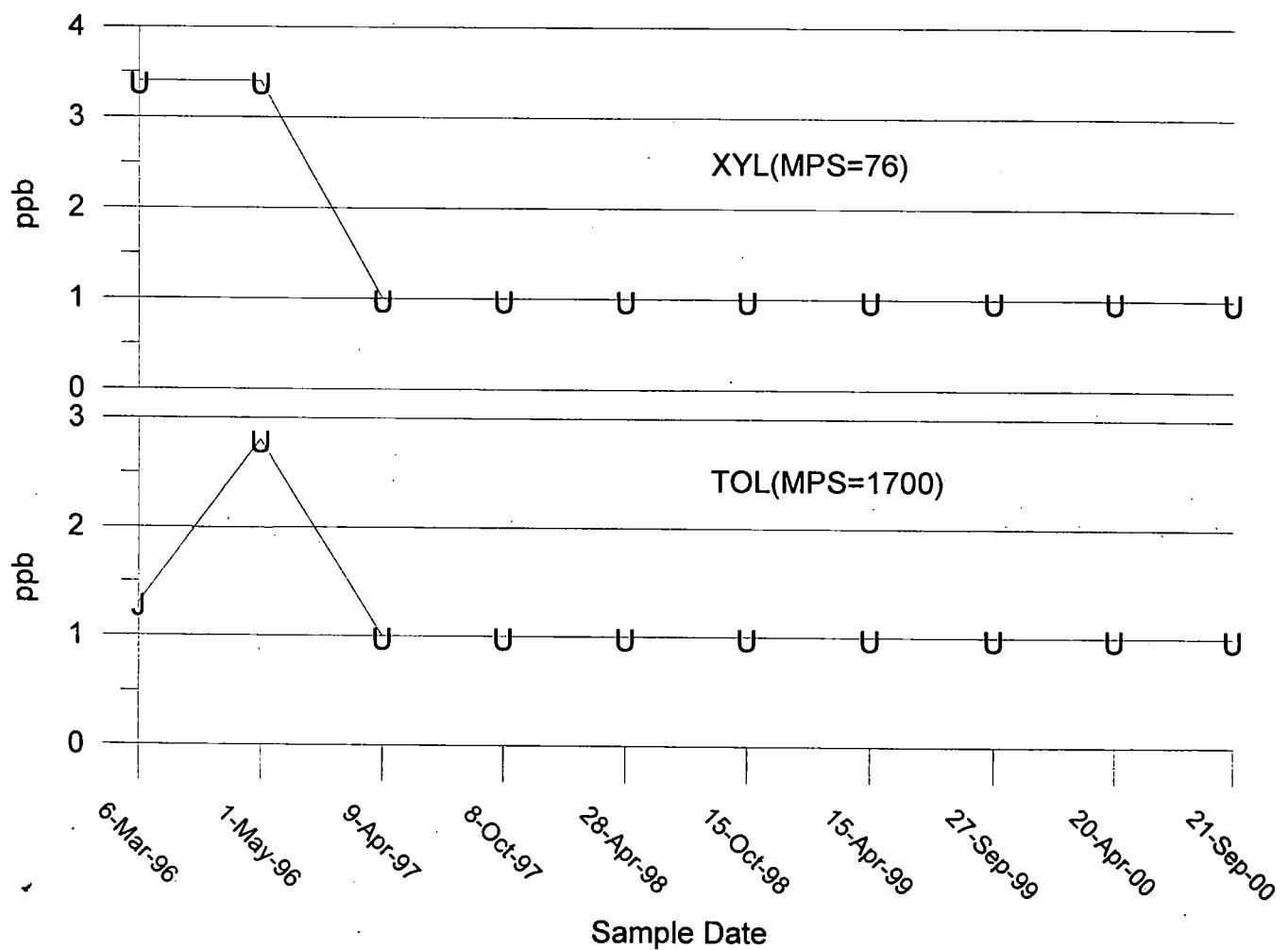
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-038S  
Along Bulkhead

"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



**APPENDIX E**  
**TIME-SERIES GRAPHS**  
**FOR**  
**IN-RIVER WELLS**

**Table 5**  
**IN-RIVER WELLS**  
**Cumulative Results for Chemicals Of Concern**  
**(Units in ppb)**

Well No.	Date Sampled	1,2-Dichloro-benzene	Chloro-benzene	o-Chloro-toluene	Toluene	Xylenes
MPS		94	1700	1500	1700	76
SW-110	6-Mar-96	54	1600	55	460	34 U
SW-110	2-May-96	63 J	1600	40 U	220	68 U
SW-110	10-Apr-97	23	110	1	62	8
SW-110	8-Oct-97	1 U	1 U	1 U	1 U	1 U
SW-110	27-Apr-98	21	1100	2	170	6
SW-110	15-Oct-98	100 U	440	100 U	100 U	100 U
SW-110	15-Apr-99	50 U	670	50 U	50 U	50 U
SW-110	27-Sep-99	40 U	40 U	40 U	40 U	40 U
SW-110	27-Sep-99	40 U	40 U	40 U	40 U	40 U
SW-110	20-Apr-00	47	20 U	91	380	20 U
SW-110	21-Sep-00	100 U	2000	100 U	820	100 U
SW-120	5-Mar-96	4.3 U	63	2 U	2.8 U	3.4 U
SW-120	30-Apr-96	4.3 U	70	2 U	2.8 U	3.4 U
SW-120	8-Apr-97	1 U	43	1 U	1 U	1 U
SW-120	7-Oct-97	1	39	39	31	2
SW-120	27-Apr-98	1 U	54	1 U	1 U	1 U
SW-120	15-Oct-98	1 U	36	1 U	1 U	1 U
SW-120	15-Apr-99	10 U	92	10 U	10 U	10 U
SW-120	27-Sep-99	10 U	68	10 U	10 U	10 U
SW-120	20-Apr-00	1 U	67	1 U	1 U	1 U
SW-120	21-Sep-00	9100	500 U	500 U	500 U	500 U
SW-130	6-Mar-96	4.3 U	3 U	6.5	2.8 U	3.4 U
SW-130	1-May-96	4.3 U	3 U	12	2.8 U	3.4 U
SW-130	9-Apr-97	1 U	1	12	1 U	1 U
SW-130	7-Oct-97	1 U	1 U	2	1 U	1 U
SW-130	27-Apr-98	1 U	27	14	1 U	1 U
SW-130	15-Oct-98	1 U	1 U	1	1 U	1 U
SW-130	15-Apr-99	1 U	5	5	1 U	1 U
SW-130	27-Sep-99	1 U	1	2	1 U	1 U
SW-130	20-Apr-00	1	10	30	1 U	1
SW-130	21-Sep-00	5 U	5 U	5 U	5 U	5 U

MPS = Media Protection Standard

U = Nondetect with detection limit given

J = Estimated value

1,2 Dichlorobenzene MPS=94 PPB

Chlorobenzene MPS=1700 PPB

o-chlorotoluene MPS=1500 ppb

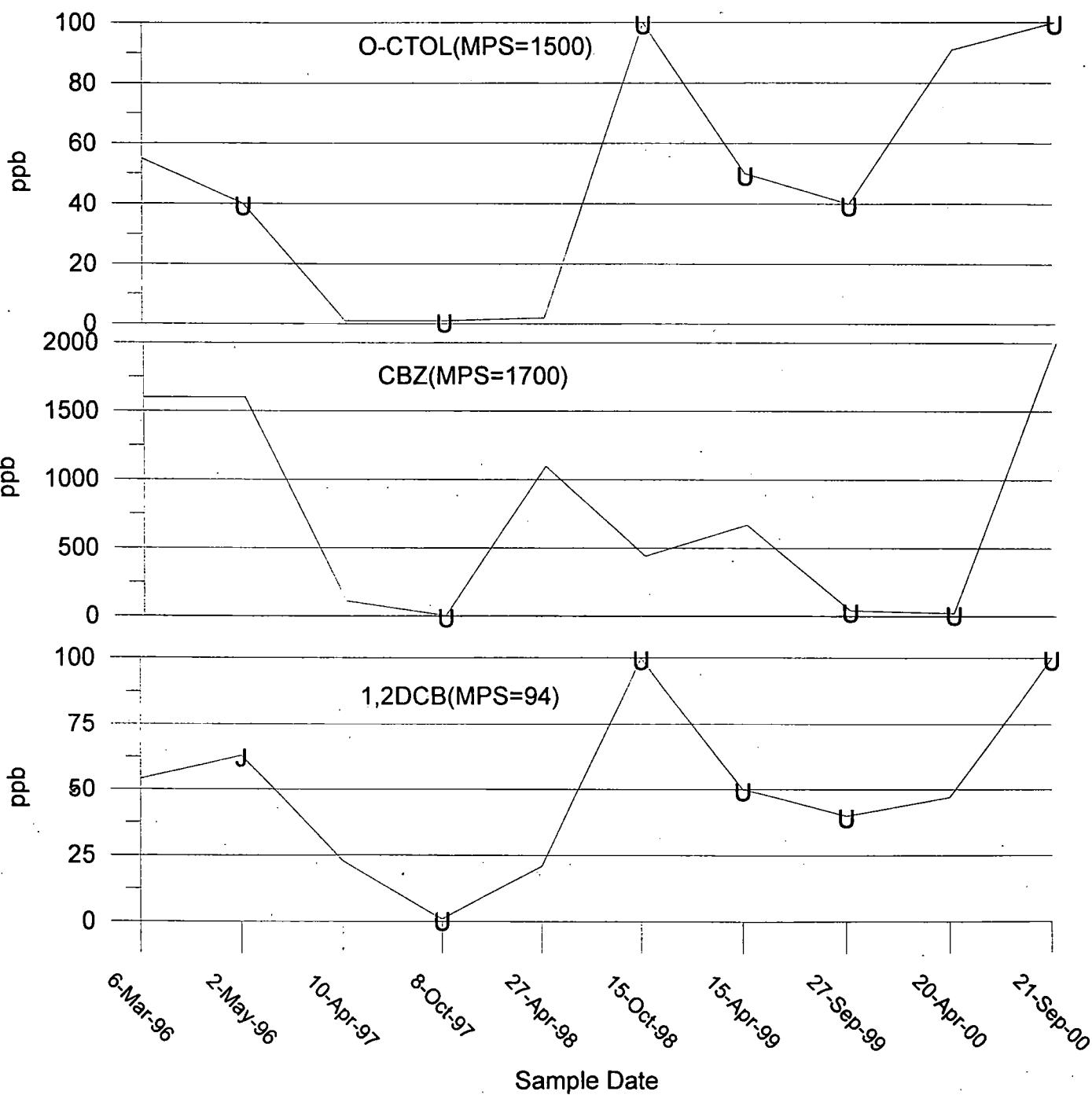
toluene MPS=1700 ppb

xylenes MPS=76 ppb

Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-110  
In-River Wells

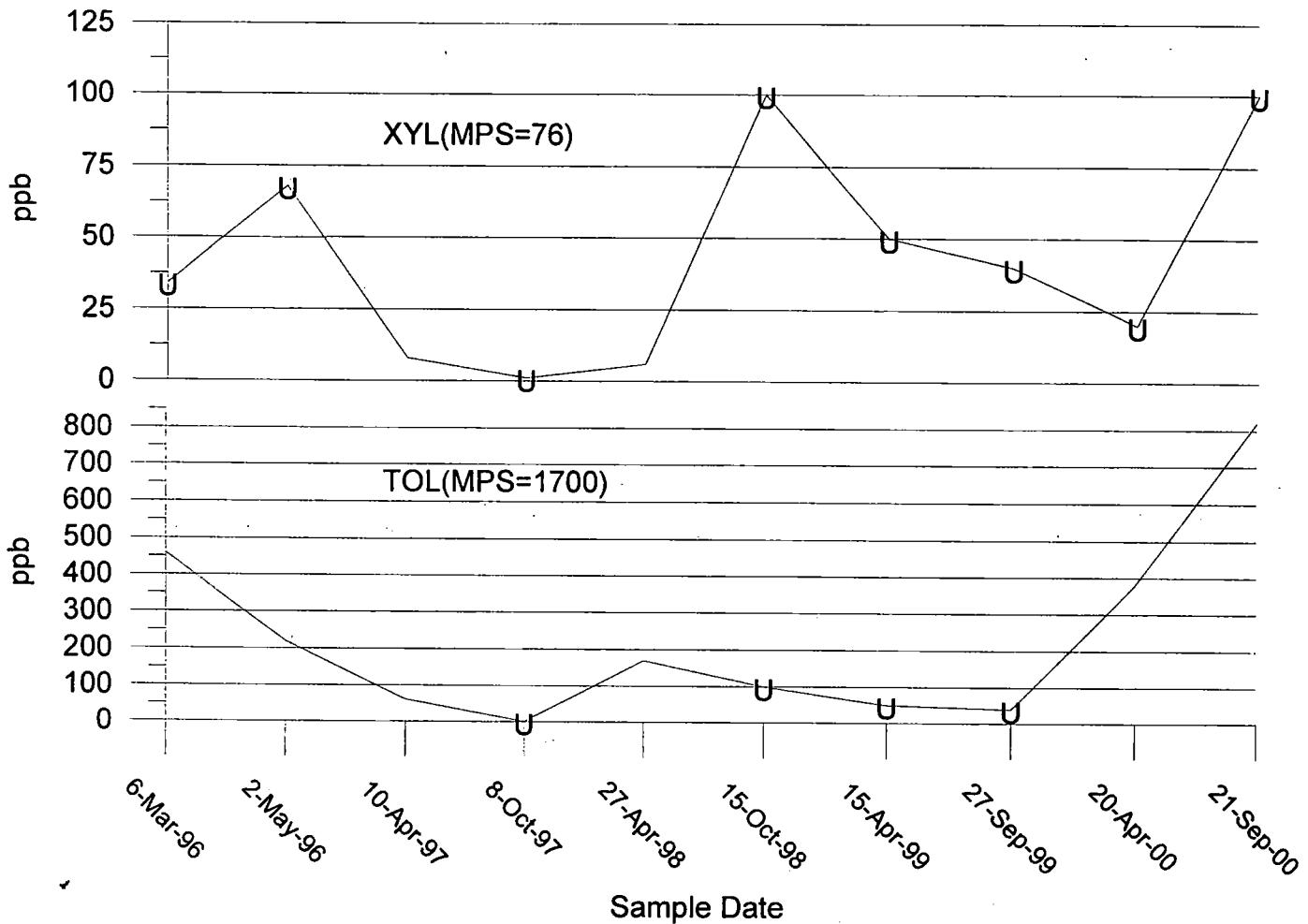
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-110  
In-River Well

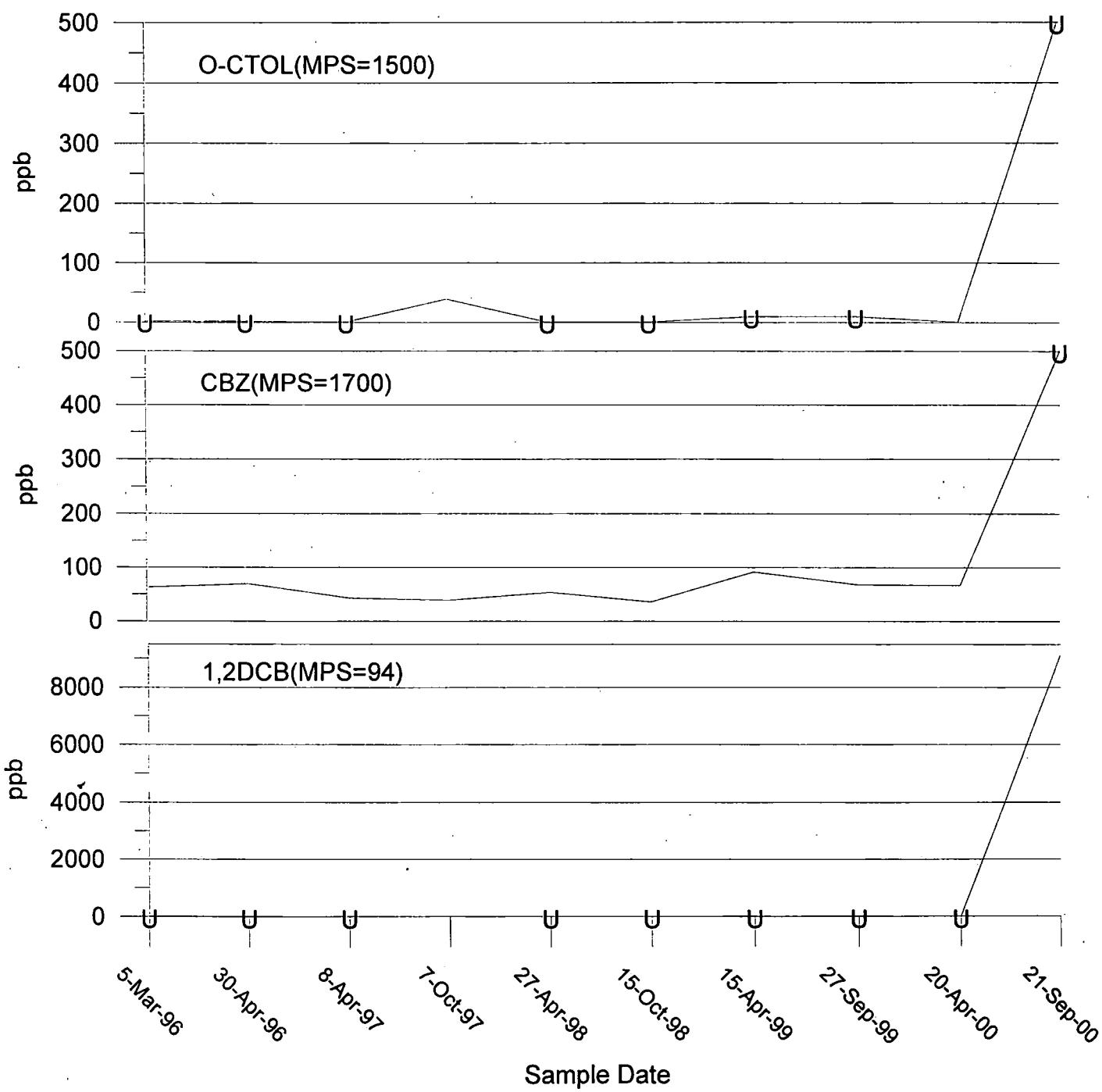
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-120  
In-River Well

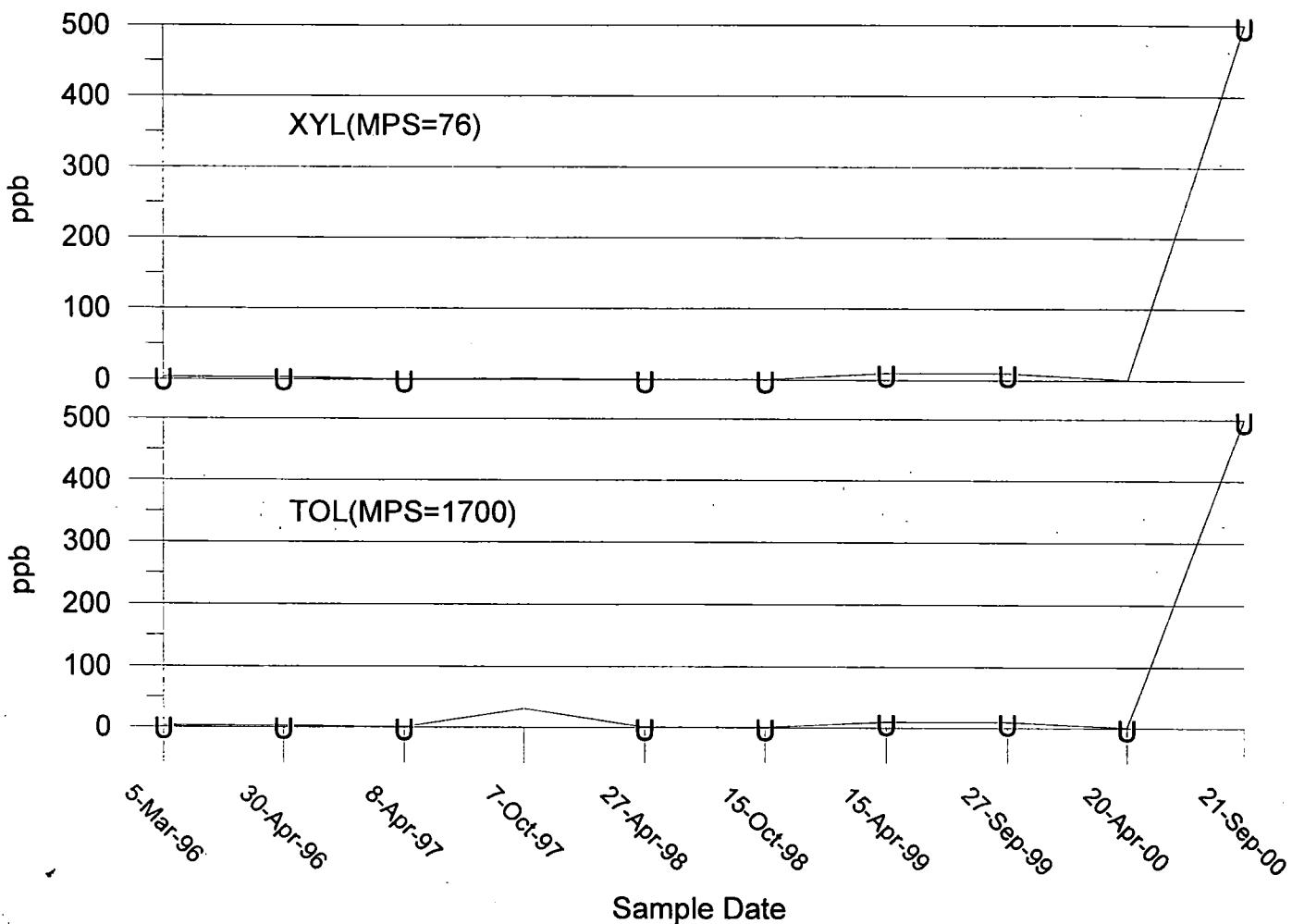
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-120  
In-River Well

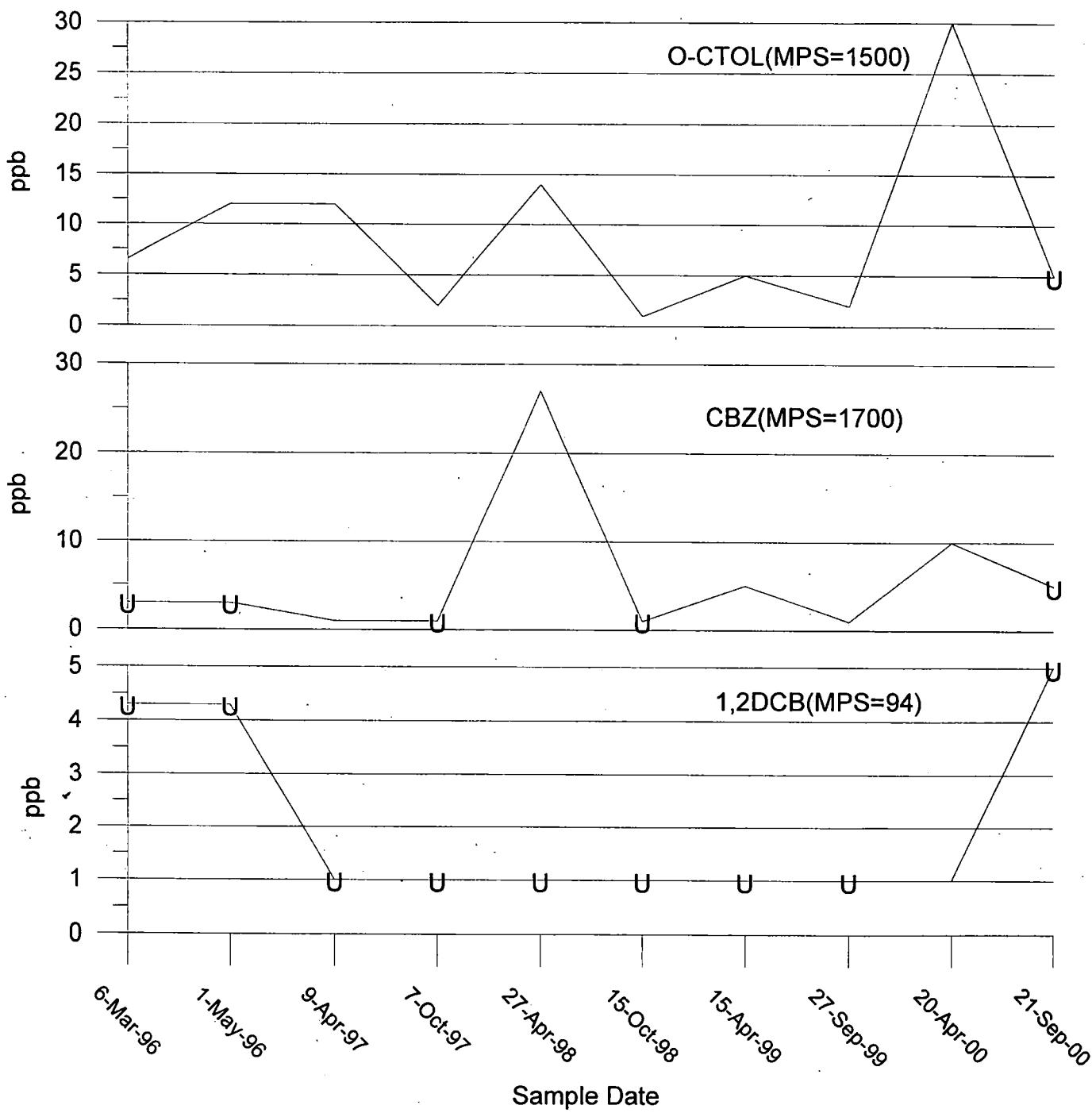
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-130  
In-River Well

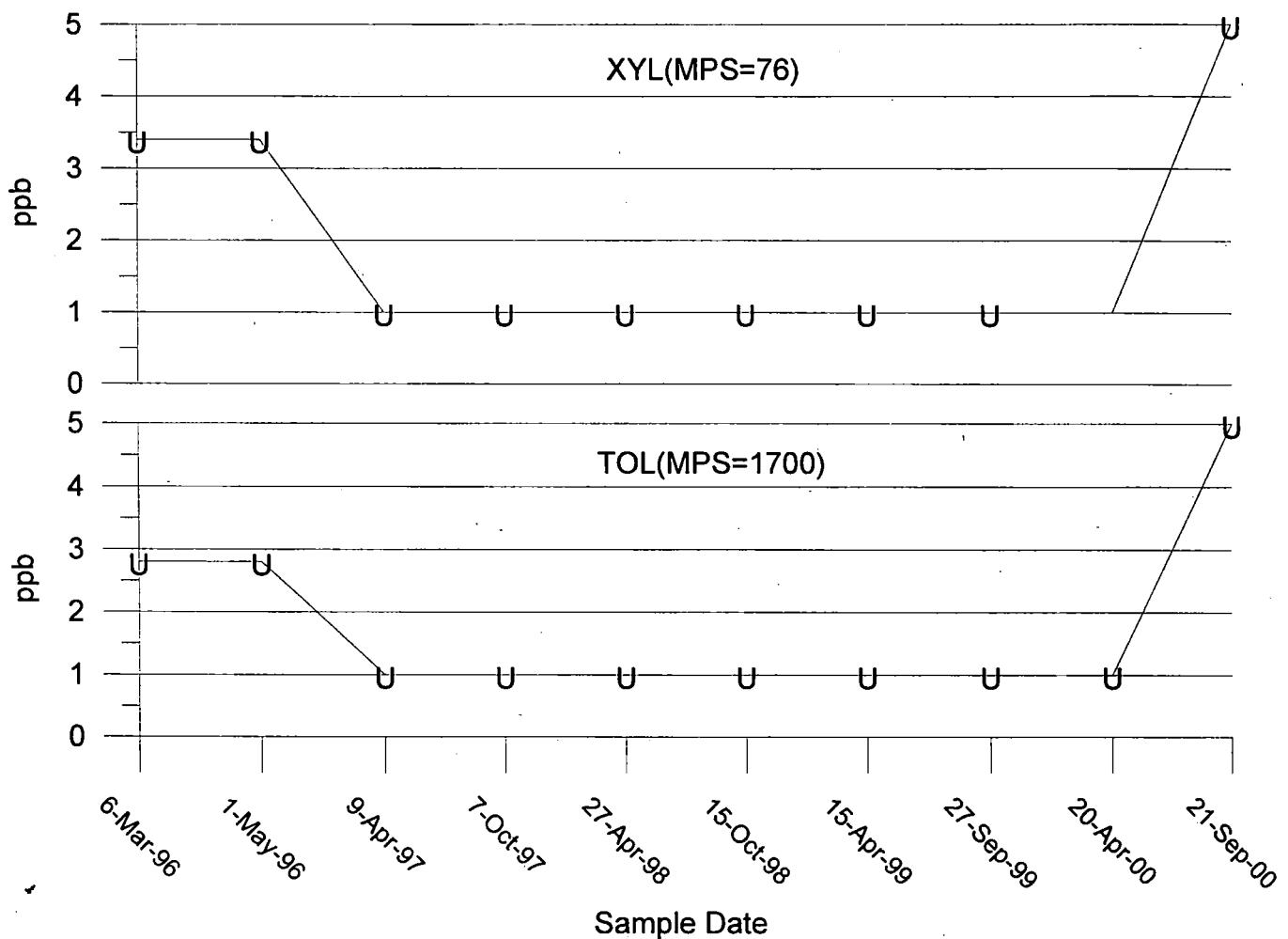
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-130  
In-River Well

"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.

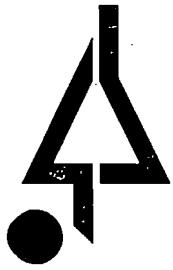


**APPENDIX F**

**R.I. ANALYTICAL LETTER**

**FOR**

**REPORTING ELEVATED DETECTION LIMITS**



# R.I. Analytical

Specialists in Environmental Services

January 22, 2001

Ciba Specialty Chemicals Corp.  
Attn: Mr. Barry Cohen  
Environmental Building #743  
Rout 37 West  
Toms River, NJ 08754

Dear Mr. Cohen:

As per your inquiry through our Vice President James Mich, a review was requested for Work Order 0009-11589(-001,-002,-003,-008 and -011). The Work Order consisted of the 180 Mill Street Cranston RI Monitoring Well samples. The detection limits for five analytes are in question for method SW-846 8240. The error that occurred in reporting the elevated detection limits is that the samples were analyzed at several dilutions. RIAL has hired a new analyst who took the initiative to check the dilution factors of the historical data and analyzed the samples using those dilution factors. The needed detection limits were unknown to the staff member at that time, in addition the samples were analyzed on new equipment which the analyst were afraid of contaminating.

The results for the above noted samples will stand as reported. They were reported at the dilution due to high levels of target compounds and concerns for contaminating the GC/MS instrumentation.

RIAL sample 0009-11589-005 MW-01s grab 09/21/01 was reported at a detection limit of 1.0 ug/l but should have reported at 250x(250 ug/l). Therefore, this sample's detection limit is too high also.

RIAL sample 0009-11589-019 PW-130 grab 09/21/01 @1120 was reported at a detection limit of 1.0 ug/l but should have reported at 10 ug/l. These corrected detection limits are still below the needed requirements.

The reports are being altered to reflect these changes.

R.I Analytical would like to offer its services in re-sampling and analyzing the analysis for the wells that are out of compliance at no cost.

If you have any further questions, please contact me.

January 22, 2001

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Hobin".

Michael J. Hobin  
Quality Control Coordinator

Cc: James E. Mich Vice President of Operations  
Cc: Debra Jardin Customer Service